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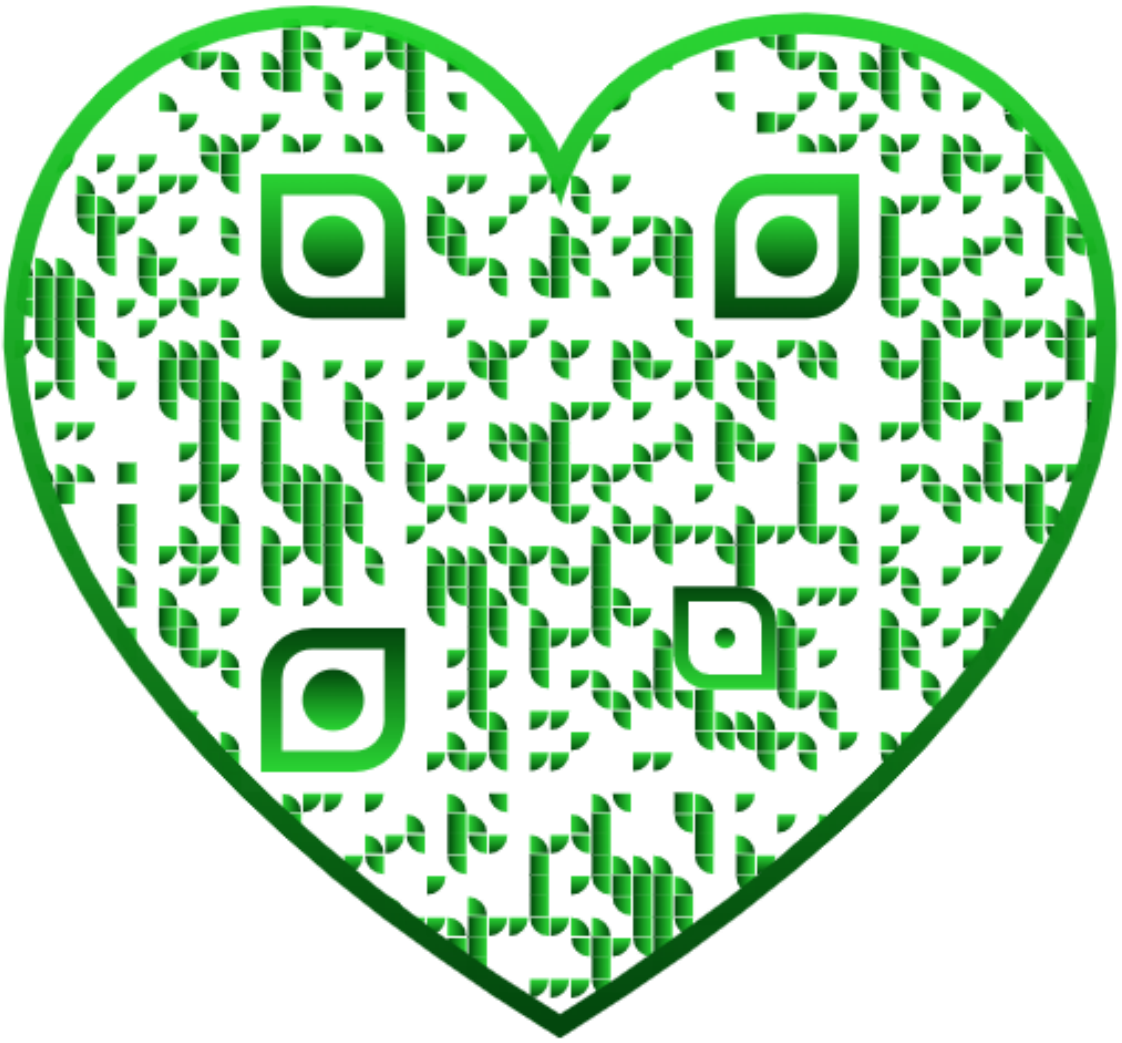

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Following the Munich High End show

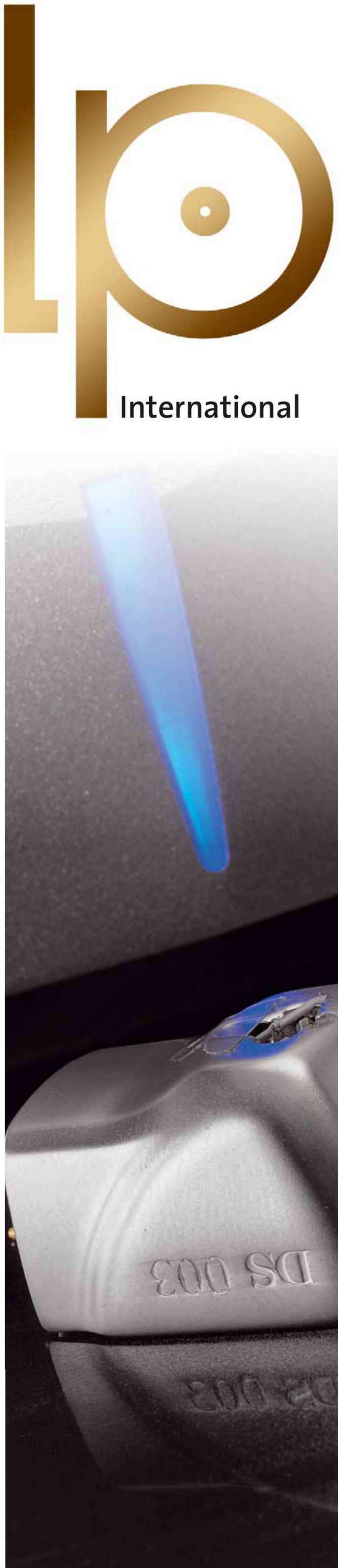
The battle is over. And it was one, I can tell you that. The High End 2022, held in the Bavarian capital of Munich in mid-May, was exactly what the unsettled HiFi world needed, namely a sign.

A sign that things are at least partly moving towards normality and that not every event with 20,000 participants has to mutate into a Super Spreader Event. Our thanks go to the organizing High End Society, who kept the flow of visitors within manageable dimensions with a sense of proportion, otherwise many more people would definitely have visited the show.

And so the High End 2022 almost felt like a completely normal High End, with the small difference that both the exhibitors and the audience appeared in an even better mood than usual: everyone was visibly happy to finally meet like-minded people again. The exhibits presented leave no doubt that analogue things are doing better than they have for a long time: hardly any exhibitor did without a record player in his exhibition. And the number of well-known names that are presenting vinyl players for the first time in the top segment is increasing, for example Nagra and Esoteric showed record players under their own names for the first time.

This is one of the reasons why High End can be considered a complete success: Vinyl has established itself as an equal source alongside high-quality digital formats.

Holger Barske, Chefredakteur



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Balanced turntables and phono stages from Pro-Ject

Almost every discerning music listener knows the advantages of balanced cabling, but only a few use it. Pro-Ject is therefore launching the new turntable X8 and the two Phono Boxes DS3 B and S3 B. Vinyl listeners can thus experience the sonic advantages of Balanced cabling for themselves. The new Pro-Ject X8 remains affordable (from 2000 euros) and still combines the advantages of sub-chassis and mass drive. The 5.1 kg heavy and damped platter is precision turned from one piece of aluminum and balanced for perfect concentricity. The platter bearing combines precise guidance on a ceramic ball and ceramic running surface with magnetic relief. The first-class Pro-Ject 9cc Evolution tonearm offers a carbon fiber arm tube and headshell unit. Instead of magnetic feet, TPE dampers guarantee optimal decoupling from the ground. The 5-pin connection socket is prepared for fully balanced cabling using a separately available XLR cable. With its true balanced connection, the Pro-Ject X8 is the perfect partner for phono stages with a fully balanced input, such as the new Phono Box DS3 B (600 euros).

The former offers equipment that is rarely found even in phono preamplifiers that are several times more expensive: the inputs and outputs are equipped with balanced XLR connectors, and the input impedance can be continuously adjusted to the pickup. The circuit in dual-mono design with a fully balanced gain section is built discretely without an operational amplifier. The housing consists of a steel chassis with aluminum cladding to suppress interference. Magnetic side panels made of wood are available separately.

Contact: ATR, Mülheim
Telephone: +49 208 882660
Internet: audiotra.de

Black is Beautiful: Wharfedale Linton Heritage and Denton 85 now also available in black finish

With the Denton 85 bookshelf speaker and the Linton Heritage floorstanding model, Wharfedale packs the latest speaker technologies into discreet cabinets shaped by British design tradition. High-quality veneer surfaces in walnut or mahogany radiate the charm of the 1970s without appearing out of place in modern living environments. The manufacturer is now also offering its two successful models in a black „Black Oak“ finish for even more flexibility when integrating them into your personal interior design.

The Linton Heritage by Wharfedale exudes the charm of the 70s with its simple cuboid wooden housing and the optically unobtrusive fabric covering. The design should not hide the fact that this is a technologically mature three-way loudspeaker that is up to date. Both the 8-inch woofer and the 5-inch midrange driver have a woven Kevlar cone, which is characterized by high rigidity and low weight, thus ensuring the best impulse response with the lowest partial vibrations. The soft dome tweeter adds silky smooth highs that are never intrusive or exhausting.

The Denton 85th Anniversary is the current version of the legendary Wharfedale Denton bookshelf speaker. With its design language characterized by British understatement, it cuts an excellent figure in any environment and at the same time impresses with its great sound.

The recommended retail prices including VAT are EUR 799.00 for a pair of Denton 85 and EUR 1,199.00 for a pair of Linton Heritage (EUR 1,598.00 including the Linton speaker stands).

Contact: IAD, Korschenbroich
Telephone: +49 2161 617830
Internet: iad-audio.de

Stereo music systems with integrated turntable

+AUDIO is a company whose employees are passionate music lovers and professionals in the fields of design, engineering, manufacturing and distribution. The manufacturer‘s extraordinary music systems are aimed at audio enthusiasts who appreciate audiophile quality in compact housings, with timeless design and intuitive controls. Unlike many other audio companies that simply place their name on off-the-shelf products, +AUDIO develops its audio products from the ground up. Only the finest, hand-picked components and materials are used to meet the highest quality standards. The result is durable products designed for long-lasting music enjoyment.

THE +RECORD PLAYER by +AUDIO is the first all-in-one phono system with a powerful stereo amplifier, a high-quality turntable and sonorous stereo speakers. The device is a very versatile, analogue and digital music system at the same time. In addition to 33/45 rpm vinyl playback, it includes Bluetooth for streaming music from smartphones or tablets, an optical input for connecting to a digital audio source or a TV, and USB in/out for ripping your records to Mac/PC or to play your music files. A logical, uncomplicated menu structure with intuitive access to various inputs, modes and volume controls ensures outstanding ease of use. THE +RECORD PLAYER is available in two different housing variants (maple / walnut) and with two different tonearms and pickup systems. The slightly more expensive Special Edition works with a carbon tonearm (instead of aluminum) and the Ortofon 2M Red pickup (instead of Ortofon OM10).

Both variants are also available under the name THE +RP SYSTEM with a stylish rack that is visually tailored to the music systems.

Contact: IDC Klaassen, Lünen
Telephone: +49 231 9860285
Internet: idc-klaassen.com

Sendy Audio introduces affordable headphones with quad-former technology

Sendy Audio's latest headphones are named after Apollo, the god of music, spring and sunlight. With a recommended retail price of 499 euros, the Apollo is Sendy Audio's cheapest open-design magnetostatic headphone.
After the manufacturer had already caused a sensation with AIVA and Peacock, it is now presenting a cheap and yet elaborately constructed model that allows an easier entry into the world of high-quality headphones. Light design, refreshingly different, well made and comfortable to wear - that's what makes Sendy Audio's Apollo stand out. The 68 mm diameter diaphragm and the highly efficient electro-acoustic energy conversion ensure naturally soft voices, deep and solid bass, treble with clear details and a transparent and clean soundstage. The earpiece is made of bubinga wood with a mirror finish on the surface. The steel mesh decoration inspired by the sun makes the design of the headphone new and unique. Unlike other magnetostatic designs, the Apollo only has one coil per diaphragm, but two coils on each side of the membrane. They can cover the area better than would be possible with just one coil. This results in a more even drive and therefore considerably more control. The magnets are located together with the diaphragm in a special CNC-machined aluminum housing. The high precision in manufacturing ensures a more realistic reproduction of the music signal.

Contact: AudioNEXT GmbH, Essen
Telephone: +49 201 5073950
Internet: audiodomain.de

DIMM
CANOR

Reference Tubes

After more than 25 years of creating electronics, they did it: It was time for an uncompromising amplifier package from Canor Audio. We are pleased to exclusively present to you the impressive machines

Tool – Fear Innoculum

What we played

Tool
Fear Innoculum

Action & Tension & Space
Skäredalen Funhouse

The Twilight Singers
Dynamite Steps

Tindersticks
No Treasure But Hope

We were lucky, I guess. Two months later, writing this story might not have been so funny anymore, which has to do with the fact that the ladies and gentlemen from Canor Audio have hung a giant „Class A“ sign on their brand-new three-piece amplifier set and are pretty serious about it. As a result, the team permanently consumes 700 watts of power during operation – i.e., regardless of the level control – and in the worst case, none of it is converted into energy to drive the speakers, but all of it into waste heat and a pretty noteworthy temperature increase in smaller listening rooms. In summer, that may not be entirely pleasant. On the other hand, if you invest around EUR 40,000 in your new speaker drive, you probably have a few more cubic meters of listening room air, which means the temperature increase doesn‘t matter.

The switch for the negative feedback is well hidden at the bottom of the device

The Canor preamp is called Hyperion P1 and changes hands for 12,000 EUR. The mono power amplifiers are called Virtus M1 and cost 14,200 EUR each. Both devices are available in either silver or black anodized cabinets.

The fact that these statement products have seen the light of day at all is not surprising: After more than 25 years of more or less continuous growth of the company from eastern Slovakia, it was simply time to put the cards on the table and show what‘s possible when you mean business without restraint.

The preamp‘s symmetrical amplifier circuitry is impressively short

Measurements

Lab commentary

The preamp delivers an exemplary straight frequency response up to almost 100 kilohertz, and the power amp as well. The minus three-decibel point is reached at 55 kilohertz in triode mode without negative feedback. The preamp delivers an outstanding 97.7 decibels(A) of extraneous voltage decay at one volt at input and output with channel separation in the same order of magnitude. That‘s record-breaking. The distortion factor is a very low 0.04 percent under the same conditions, and the unit consumes a constant 70 watts of power. Depending on the operating mode, the power amplifiers deliver between 180 and 250 watts into both eight and four ohms. They also impress with an excellent impedance ratio of just under 97 decibels(A) at five watts at the output. Without negative feedback and in triode operation, the values become insignificantly worse. The power consumption per monoblock is a constant 300 watts.

The mono power amplifiers deliver an impressive 250 watts – more than double what the manufacturer claims

Teammates

Turntable:
· TechDAS Air Force III / Reed 3p / Reed 1x

Phono preamps:
· MalValve preamp three phono
· DIY with tubes
· DS Audio DS003

Speakers:
· DIY Focal / JBL
· Sound + Tone Ella
· Fishhead Audio StrEight 1.8 FSo

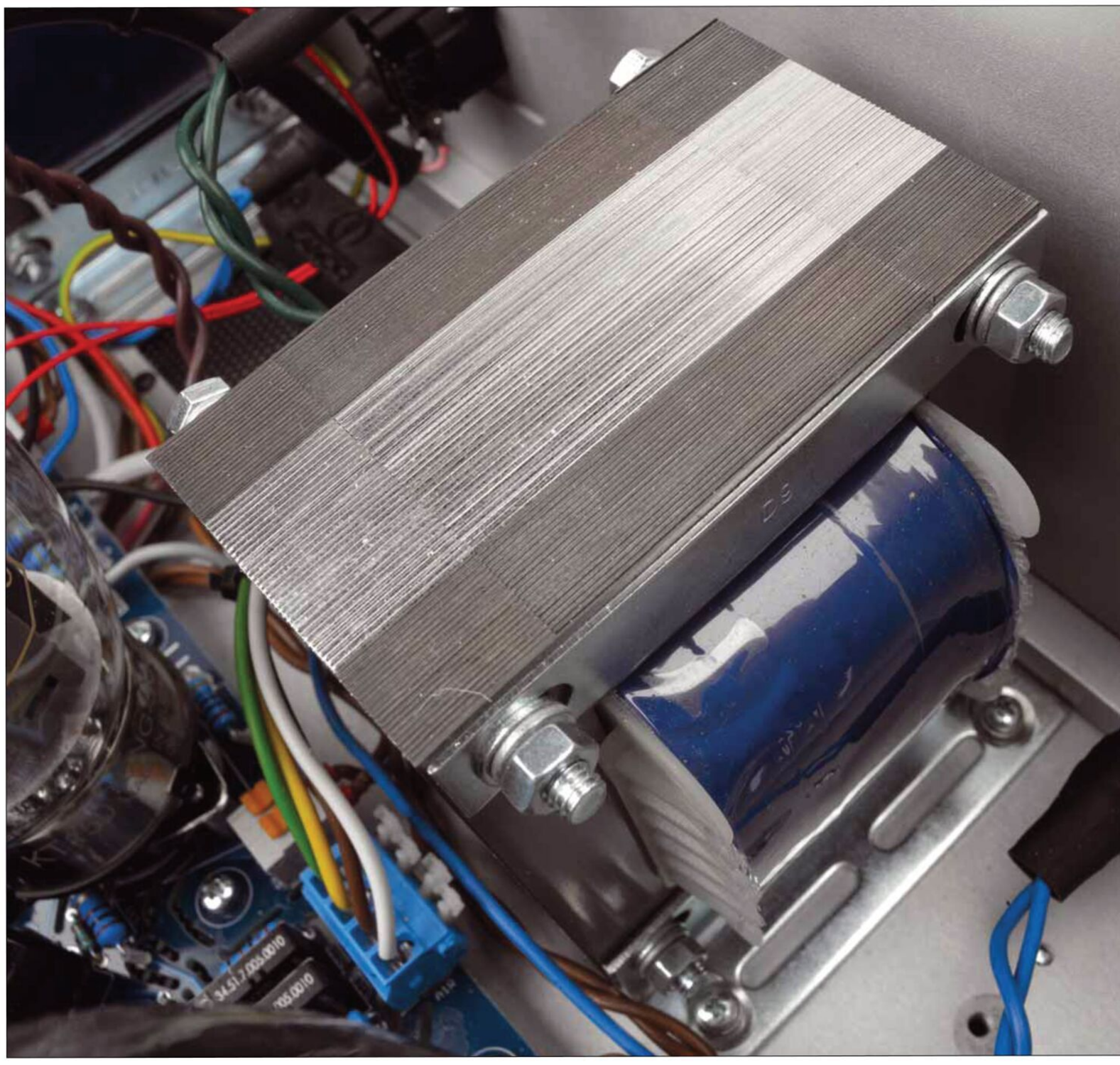
Competitors

Preamplifier:
· NEM PRA-5

Power amplifier:
· Silvercore Collector's Edition

From the outside, the three heavyweights (35 kg for the preamplifier, 40 kg for a power amplifier) can easily be identified as Canor products. The linear design language with the large centrally arranged „control cylinder" is part of the Canor „face," as is the black acrylic strip running across the front with the control and display elements arranged behind it. In the rest of the product range, the technology is hidden under solid black powder-coated sheet steel covers; in the case of the reference combination, it had to be much finer aluminum with generous cooling openings and milled company logos. By the way, Canor does all the metalwork in-house and is justifiably proud of its vertical range of manufacture.

Let's first look at the preamplifier, which, like the power amplifiers, was implemented strictly balanced. First of all, the four XLR inputs and two XLR outputs on the rear panel, which are supported by five RCA inputs and two RCA outputs, indicate this. Otherwise, the back panel reveals a power input jack and two trigger connectors that can be used to switch on the power amplifiers remotely.



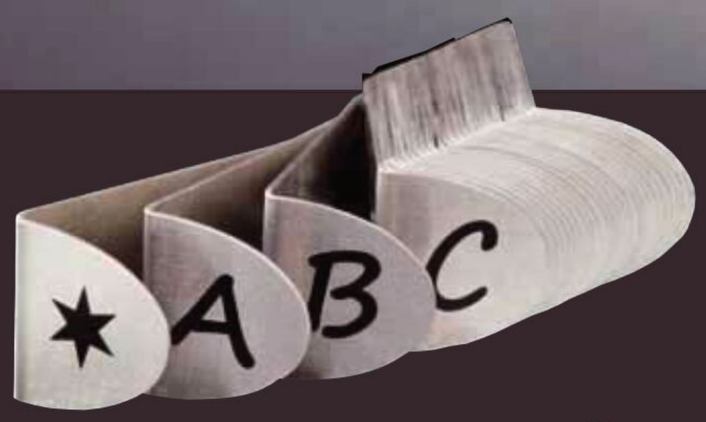
Canor winds the output transformers themselves, using MU metal cores

An aluminum wall separates the power supply from the amplifier section of the Hyperion P1

Otherwise, it is switched on via infrared or a small button on the front. The machine first acknowledges the switch-on request with a small blinking LED, followed by a distinct clicking of various relays inside, and the usual Canor light show starts. That is to say: The characteristic orange glow of the dot-matrix display shines. When the pulsating light has given way to a constant glow, the device is ready for operation.

The interior is divided into two parts by solid aluminum walls: the power supply on the left and the signal processing on the right. The device draws power from an encapsulated transformer located directly behind the front, displaying its special merits via laser inscription. It is supplied with an already filtered current. Numerous control circuits on the power supply board ensure a clean supply of the tube section and the control. This includes the 64-step symmetrical relay volume control encased separately in thick-walled aluminum. The amplifier circuit itself is pleasingly simple: Three double triodes (2 x 6922, 1 x 6H30) do the job per channel – of course, also fully balanced. This works excellently, as the lab test proves. Until the power amplifiers are warm, we can enjoy the gentle click of

The preamplifier has no shortage of connection options



Sort with style

Crafted steel markers

www.artab.de

The preamp is remotely controllable, of course

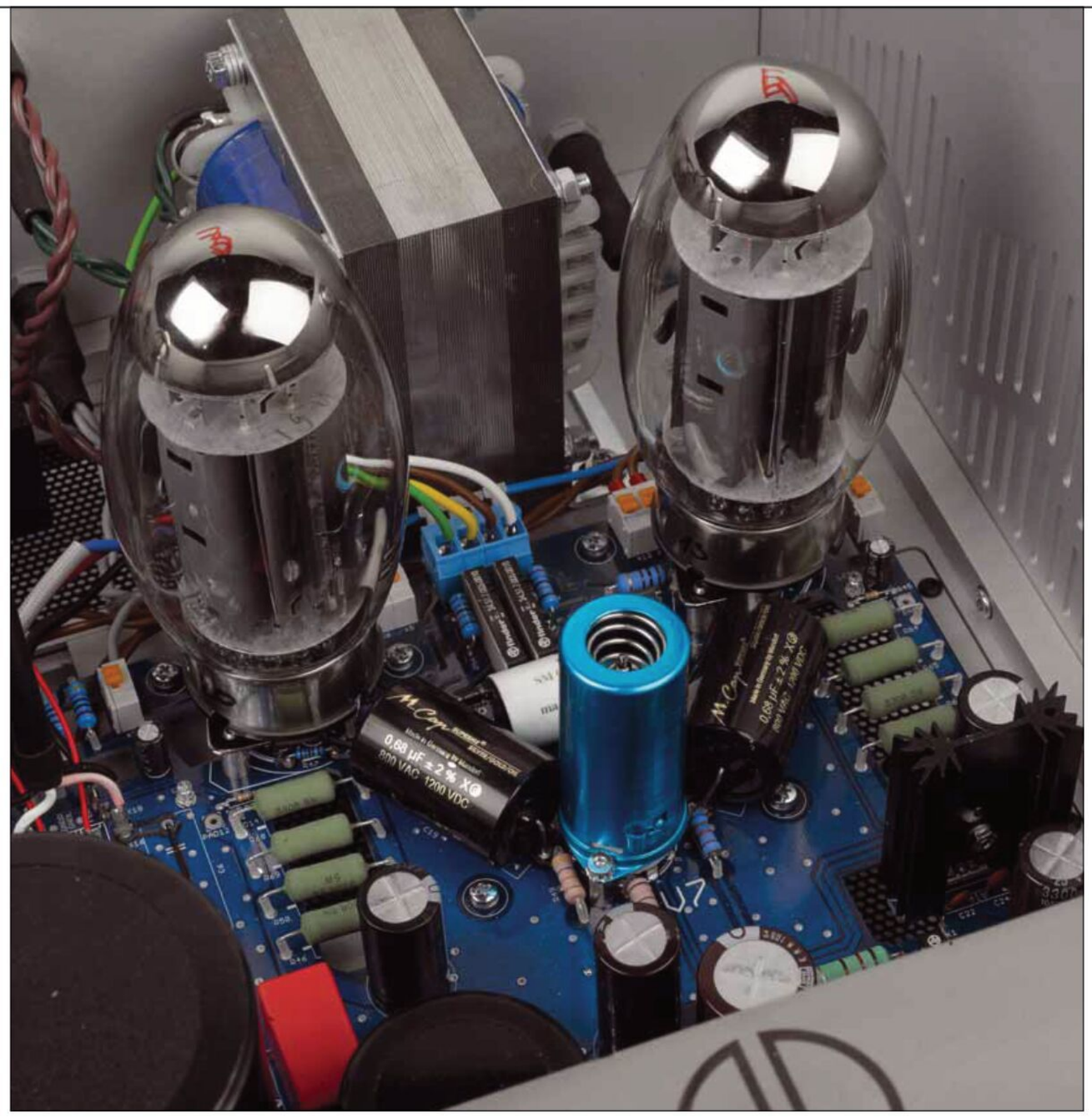
the level control relays when turning the volume cylinder – I hardly dare to call it a „knob."

The power amps are among the most potent tube units I've ever had in my hands: 250 watts of continuous power are no problem if you put your mind to it. That is astonishing because it's more than double what the manufacturer specifies. Canor uses a bridge circuit with two KT150 beam power tubes, some of the most powerful specimens on the market.

The unit can be switched from ultra-linear to triode operation. A small toggle switch on the bottom can eliminate the already low negative feedback. Even in non-feedback triode mode, these monsters still deliver a whopping 180 watts. Each monoblock constantly consumes 300 watts of electrical power – it remains to be seen how long the power tubes will withstand this. There was no hint of a problem during the test period in this regard. Two ECC82 and one ECC81 are responsible for driving the large tubes. The thick power transformer sits together with the choke for the high voltage supply in a damping and shielding metal box. By the way, to keep the operating voltage

Canor puts a lot of effort into its power transformers

There are connections for four- and eight-ohm loudspeakers

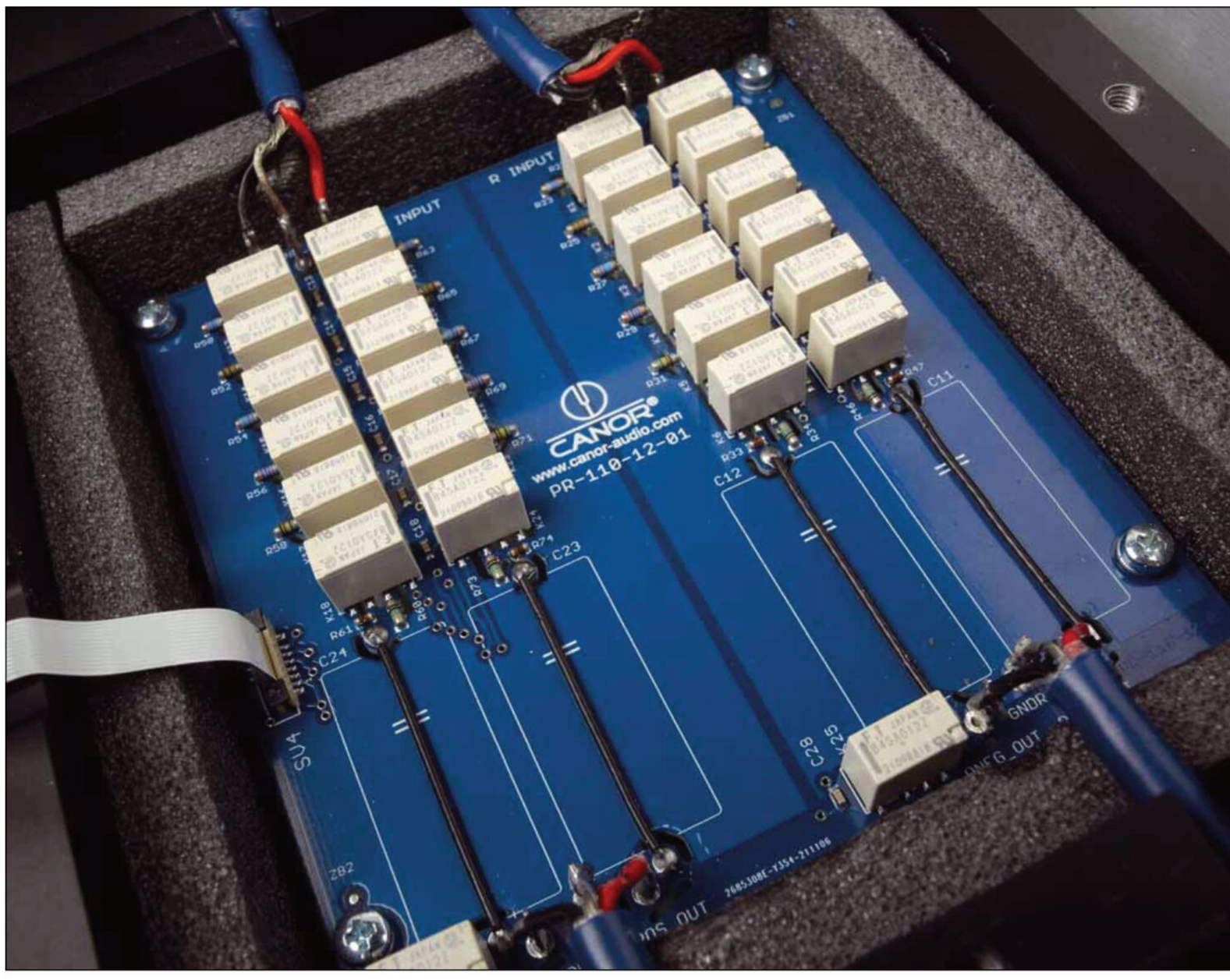


One of the two bridged power amp branches in the Virtus M1

of the amplifier constant under all circumstances, the power transformer has several primary winding taps. An electronic helper continuously measures the mains voltage and selects the appropriate winding. Very clever. Canor manufactures all transformers, including the output transformers themselves. For a power amplifier of this performance class, they are surprisingly compact. Still, the measurement technology proves the manufacturer right here as well: No significant drops in the bass and good linearity are the results. The rest of the equipment looks like it was destined to be in amplifiers of this quality class. Starting with the massive filter capacitor for the high voltage and not ending with the silver-gold-oil coupling capacitors from Mundorf.

There are two pairs of luxurious speaker terminals on the rear for connecting four- and eight-ohm speakers. I did all listening tests with the eight-ohm taps, which worked fine.

Of course, I started the listening test with my usual 96-decibel speakers, knowing that amplifiers like the Canor are overkill for transducers with such high efficiency. However, the technical quality of the Canor combo can be judged very well: With no signal at the input, there is surprisingly little residual noise, even with the level control turned up. Compliments!



This is the symmetrical relay level control

Building blocks of a world-class power amp: KT150, ECC81, and a shielding cup for the small tubes

The two power amplifiers are the dominant devices of this combination in terms of sound. This is due to the switching options for the negative feedback and the operating mode. There is no question that the negative feedback switch is redundant – the Virtus M1 monos play as if unleashed when negative feedback is switched off. With negative feedback, they are well-behaved and... well, nice. I initially attributed this phenomenon to the „loud“ speakers, but the effect also occurs with the Fishhead Audio StrEight 1.8 FS, which are considerably quieter at 87 decibels. The difference in level between switched-on and switched-off negative feedback is also minimal, so apparently, even a little negative feedback is enough to impair the sound experience permanently. The question of ultra-linear or triode operation is not quite as simple. I prefer the somewhat rougher and more colorful triode mode, but I can understand if someone prefers the more straightforward ultra-linear mode.

The Canor combo reminds me of great American tube technology when adjusted appropriately. It has almost inexhaustible power reserves and makes Tool‘s insane album „Fear Inoculum“ a feast of music listening via the stomach, perfectly preserves stability and balance even at extremely excessive SPL levels, and always sounds rhythmically convincing, colorful, and authentic. An exceptional voice like Greg Dulli‘s (Afghan Whigs, Twilight Singers) sounds so beautifully weird and explosive as I have rarely experienced, and Tindersticks frontman Stuart Staples takes us in his arms so lovingly that tear flow is almost inevitable. Great!

Holger Barske

The round button in the middle of the power amplifier has only an optical functionality

Canor Hyperion P1 / Virtus M1

· Prices: approx. 12000 / 14200 EUR
· Distribution: IDC Klaassen, Lünen
· Telephone: +49 231 9860285
· Internet: canor-audio.de
· Warranty: 2 years
· Dimensions: 450 x 190 x 465 mm (WxHxD per unit)
· Weight: approx. 35 / 40 kg

Canor Hyperion P1 / Virtus M1

International 2/22

» Canor's top combination is a stellar moment in tube amplifier design. Colorful, rhythmic, smooth, and extremely powerful, they impress with great sound.

Flagship Phono of a Slightly Different Kind

An unadorned black box, acrylic front, 600 EUR, from England. Yes, this phono preamplifier from Edwards Audio will be alright. Will it?

MC6

Richard Koch Quartett – Stadt

Gespieltes

Richard Koch Quartett
Stadt

Tsuyoshi Yamamoto
Autumn In Seattle

King Buffalo
The Burden Of Restlessness

Steely Dan
Aja

Of course, appearance generates an expectation. And this appearance causes something like shoulder-shrugging acceptance along the lines of: „If no one has screwed something up, you'll be able to listen to music with this thing." You suspect a certain arrogance at the beginning and rightly assume that not much of it remains after spending time with this device. The inconspicuous Edwards phono pre surprised me in several respects.

Anyway: Edwards Audio? That's one of four brands currently owned by the British company Talk Electronics. The company has been in business for more than 25 years, but Talk Electronics CEO Kevin Edwards only founded the Edwards Audio brand in 2009. And he has a mission with the new brand: Good and affordable quality hi-fi, designed and built on British soil – that MUST be possible. And indeed, the man has managed to deliver on this promise time and again, which is why we awarded the TT4 turntable „Product of the Year" last year, for example.

We are dealing with the largest phono preamp of the lineup, the MC6. A top model for 600 EUR – where else can you find that?

First of all, I like that the designers decided not to outsource the unit's power supply. That means: No plug-in power supply, no annoying separate box that has to be hidden, and no problems when switching on and off. Because: If you bring the power transformer into the device, you can also install a proper „hard" power switch.

Measurements

Lab commentary

Metrology Commentary
No problems at all in the test lab. In MM mode at 42 decibels of gain, the unit manages an excellent 73 decibels(A) of extraneous distortion at 5 millivolts at the input and channel separation in the same league. The distortion under the same conditions is 0.039 percent. At full MC gain and 0.5 millivolts input voltage, 52.3 decibels (A) remain from the noise margin. The channel separation is higher, and the distortion amounts to 0.09 percent. The device is content with a power consumption of 3.3 watts.

The MC6 resides in a black acrylic case. We did not have any problems with the interference resistance

Teammates

Turntable:
· TechDAS Air Force III / Reed 3p / Reed 1x

Cartridge:
· Mustang MM
· Ortofon Per Windfeld Ti

Preamplifier:
· NEM PRA-5
· Canor Hyperion P1

Power amplifier:
· Silvercore Collector's Edition
· Canor Virtus M1

Competitors

Phono preamplifier:
· MalValve preamp three phono
· DIY tube device

The device can be parameterized within wide limits. For this purpose, there are eight DIP switch blocks on the mainboard

Which is what happened here. It's situated not quite conveniently on the rear panel, but still.

The MC6 is an MC- and MM-compatible phono preamplifier. In MC mode, it manages a maximum gain of around 72 decibels, which is plenty, and even qualifies the unit as a partner for truly low-volume MCs. And if one has capable developers, one can realize such a high gain solution neatly even if the power

A powerful toroidal transformer provides the power supply

The MC6 is a very well-done design with a bunch of good ideas

transformer sits in the housing. Compliments in advance for that. The rear panel offers a pair of RCA inputs and a couple of output jacks. So you can connect only one cartridge. Switching between MM and MC is done by a push button, which is also located at the back.

There is nothing to do with the black acrylic front of the device except admire the company logo that glows blue or red depending on the operating mode. Black acrylic is also the material for the case lid and the side panels. The supporting structure is a sheet metal tray, which is screwed to the acrylic „U“ and serves as a support for the technology. And what you see here is what I would call an exemplary example of pragmatic, accomplished phono preamplifier design.

The power supply job is handled by a full-blown toroidal transformer made in Europe. It draws its power via the IEC socket – no, not just directly, but via the next surprise: The manufacturer has provided a „DC-filter.“ This arrangement of electrolytic capacitors and diodes removes DC

voltage components from the mains voltage, as they occur more and more often nowadays. They cause considerable problems for power transformers, manifesting themselves as intermittent mechanical hum. Downstream of the transformer are rectifiers and a properly dimensioned filter, followed by electronic control circuits for the operating voltages. The amplifier circuit itself is realized with integrated operational amplifiers. The Analog Devices types were new to me until now, but according to the datasheet, they make an extremely well-suited impression for the job. The board contains a colorful mix of wired and SMD components. The equalization is multi-stage, partly active, partly passive, and the filter capacitors are good quality. The next surprise is waiting at the output of the circuit: The last OPs are followed by discrete output stages, which provide a nice low output impedance and can also drive exotic loads without problems. Very surprising in this class.

So, and now it‘s important for you as a user: The parameterization of the device is done via no less than eight DIP switch blocks, which are also located on the circuit board and can, therefore, only be reached after removing the cover. This allows you to set various parameters, such as the amplification of the MC and the MM branch, separately from each other. This results in a variety of possible gains between 35 and 72 decibels – there should be something for every cartridge. In MM mode, you can select four input capacities and even choose between 47 and one kiloohm input impedance, which might be a good idea for one or the other high-output MC, for example. Even for MC operation, you can choose between three input capacitances (which I find rather exotic). There‘s a choice between 10, 100, and 470 ohms for MC termination impedance. It could have been a little more, but it should be suitable in 95 percent of all cases. Very amazing what the manufacturer has done with the MC6. Now it‘s time to find out whether it also pays off sound-wise.

First, the MC6 was allowed to make acquaintance with the excellent Mustang MM, which can be admired elsewhere in this issue. I ended up with maximum MM amplification (50 decibels) and had a 900 EUR combination of cartridge and phono preamplifier that makes you very reflective because it plays music excellently. We listen to Richard Koch, the Austrian jazz trumpeter, whose album „Stadt“ is very pleasing. The MM-typical sound coherence is immediately apparent. I have the impulse to simply stop with the topic „listening test“ and only listen to music. Yes, I know – that would be somewhat counterproductive at this point. The delicate smoothness the MC6 delivers at the upper end of the spectrum is already noticeable here. Koch‘s trumpet sounds supple, mellow, and complete. It gives an astonishingly profound insight, as proven by the finely chiseled

The developers even gave the device a DC filter at the mains input

percussion elements. The piano has substance and is well separated from the rest of the action, and the double bass is swinging.

We'll give the superb King Buffalo album „Burden Of Recklessness" a try. The US psychedelic trio is entirely in line with this analog combo. The sound has rhythm, drive, and this slightly laconic underlying mood that permeates the album. The guitars possess depth and a good amount of differentiation – great. Let's try an MC cartridge. The Ortofon Windfeld Ti doesn't quite match the MC6 in price, but it has character. And the Edwards phono preamp shows this immediately: This replicant 100 diamond of the Ortofon is a detail mic of the very first order, and it's incredible how much the inexpensive unit can do justice to this fact. Even certainly not simple Japanese jazz (Tsuyoshi Yamamoto) sounds exceedingly fresh, lively, and precise. The MC6 has its biggest greatest strengths in the mid to upper registers. The piano strokes decay delicately, the stage imaging has a realistic size, and the ratios fit. This gentle smoothness was impossible with the MM, which is completely fine.

Steely Dan contrasts with their work of the century, „Aja": The typical seventies sound is immediately present, everything is compact but nicely differentiated, and Donald Fagen's vocals have their distinct tonality – it just makes sense. Of course, the more expensive devices used for comparison deliver a bit more substance and perhaps sound a bit more compelling, but that doesn't detract from the quality of this fantastic 600 EUR machine. A strong recommendation!

Holger Barske

The power switch and MM/MC switch are on the back. Not optimal, but tolerable

Edwards Audio MC6

- **Weight:** ca. 1 kg
- **Price:** ca. 600 Euro
- **Distributor:** B & T HiFi Vertrieb, Erkrath
- **Phone:** +49 2104 175560
- **Internet:** bthifi.com
- **Warranty:** 2 Jahre
- **Dimensions:** 220 x 70 x 195 mm (BxHxT)

lp

Edwards Audio MC6

International 2/22

» A wonderfully unpretentious phono preamplifier with numerous adjustment options, clever detail solutions, and refined, detailed sound. It is a stunner in MM as well as in MC mode!

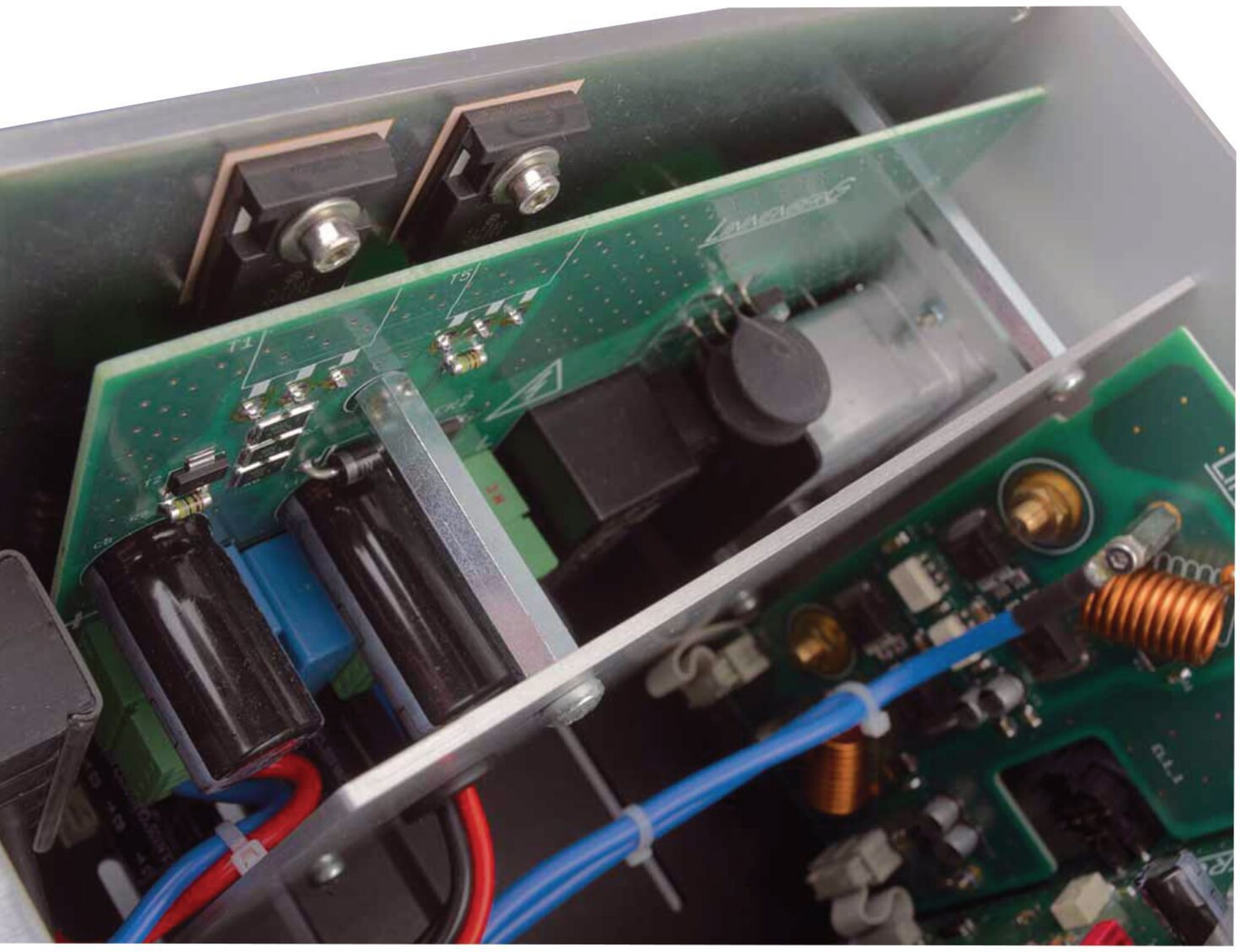
Top-level Engineering

You might expect to find all sorts of things in Schwerte, southeast of Dortmund, where the Ruhr region slowly merges into the Sauerland region, but not necessarily one of the spearheads of domestic consumer electronics. You couldn‘t be more wrong.

GEORG PHILIPP TELE
innenberg
LINNENBERG
LINNENBERG

Linnenberg „ triple pack“. For the absolute top amplifier chain, the phono preamplifier „Bach“ is missing in the picture

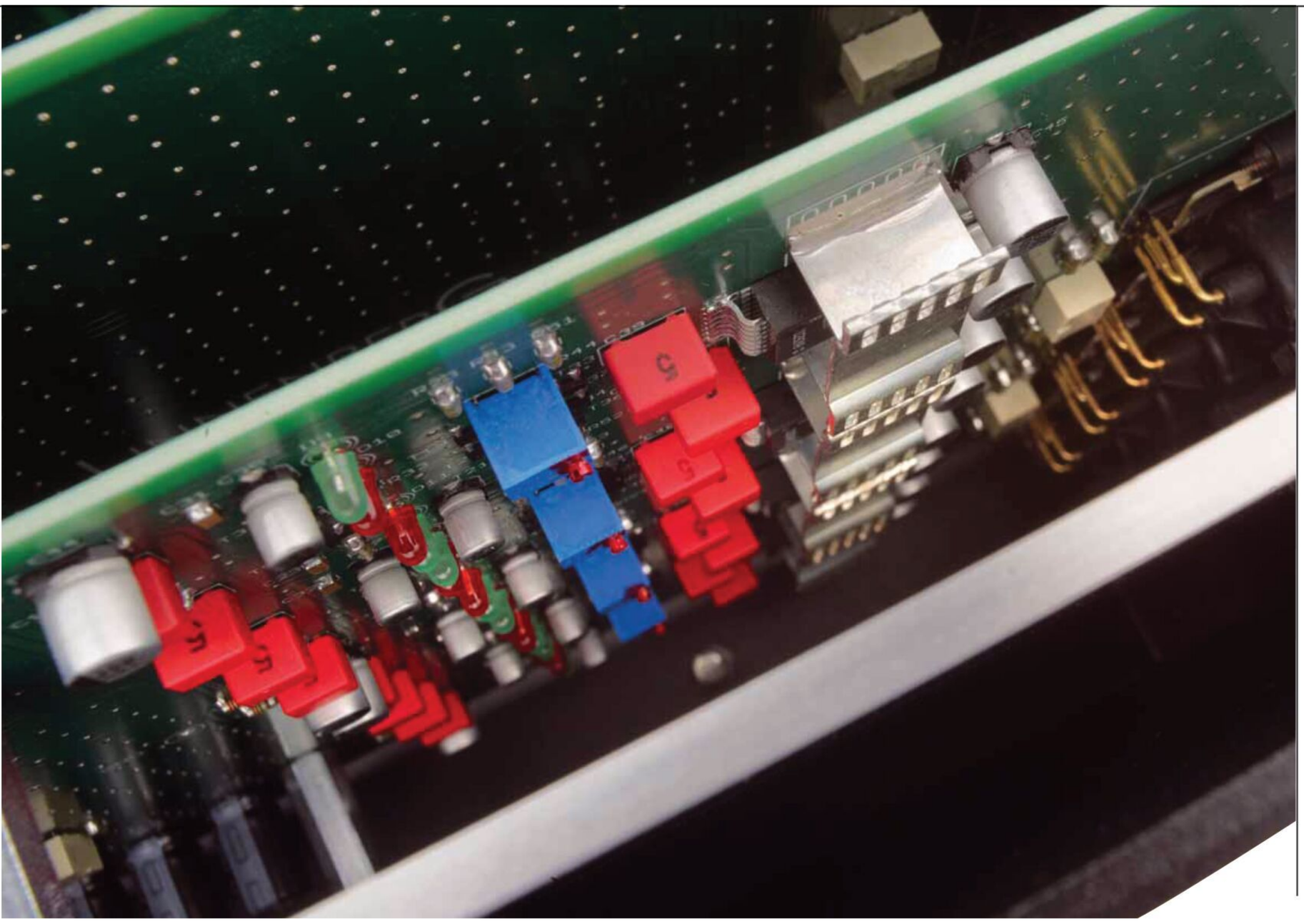
I‘ve probably told you this before, but I‘m sure you‘ll forgive me: I first met Ivo Linnenberg in the late nineties. Back then, he was already doing what still drives him: Developing and manufacturing hi-fi equipment. At that time, it was pretty components in midi format, including a pretty good top-loading CD player, if I remember correctly. At some point, it became quieter about the resourceful engineer, who still runs his company consistently as a one-person business. A few years ago, however, there were again more signs of life from Schwerte, and this time, it was components in clearly higher spheres that aroused the scene‘s interest. Linnenberg‘s sophisticated D/A converters quickly gained an excellent reputation, followed by matching amplifiers. For us, the 2018 „Liszt“ mono power amplifiers were the entry into the new Linnenberg world, and they debuted with flying colors right away. Most recently, we had the large, fully balanced phono preamplifier, Johann Sebastian Bach, as a guest, which can easily take on all the top models the market has in store.



In the meantime, Linnenberg‘s top series, including the Bach, has grown considerably. Whether it is complete, I dare not say with certainty. The phono preamplifier can now be supplemented with a matching line preamplifier called Georg Philipp Telemann, and mono power amplifiers called Georg Friedrich Händel. You currently have to invest 17,800 EUR for the preamplifier, and a pair of monos, 24,800 EUR. No bargain, but in today‘s time almost affordable for real flagships.

All models in the series are united by their unusual format: At a good 25 centimeters wide and 22 centimeters high, the silhouette of the pragmatic black cuboids appears compact, but the depth is almost 45 centimeters. This is not easy to combine visually – except with devices from the same series.

One of the secrets of the power amplifier is the „Cap Multiplier,“ which electronically simulates large screen capacitances



The amplifier section of the preamplifier. Here, the consistent use of four paths is easy to see

Teammates

Turntables:
· TechDAS Air Force III / Reed 3p
· Clearaudio Master Innovation / TT-2

Cartridges:
· Top Wing Red Sparrow
· Ortofon Verismo
· Skyanalog G-1

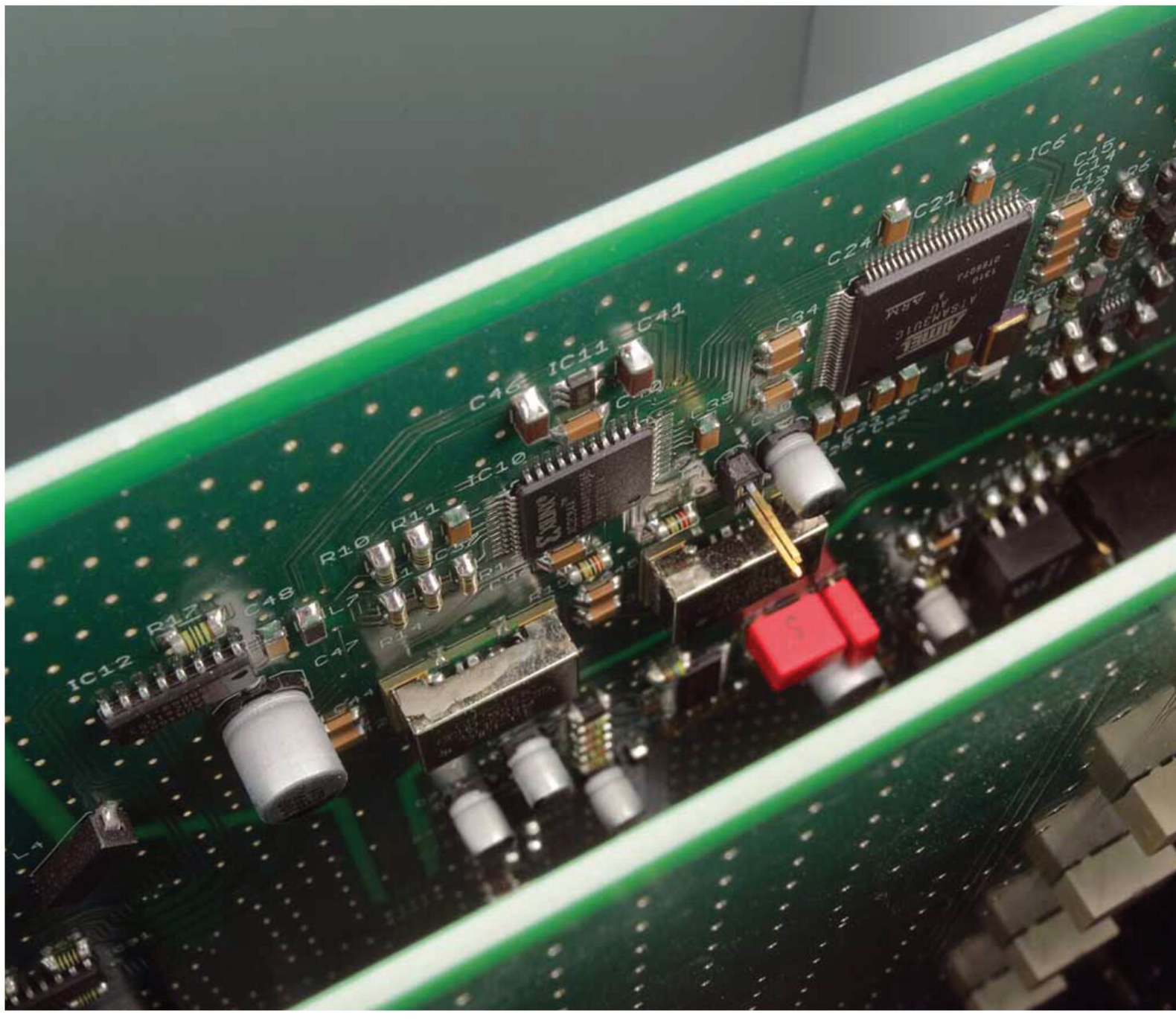
Phono preamplifier:
· MalValve preamp three phono
· Clearaudio Absolute Phono Inside

Loudspeakers:
· DIY Focal / JBL

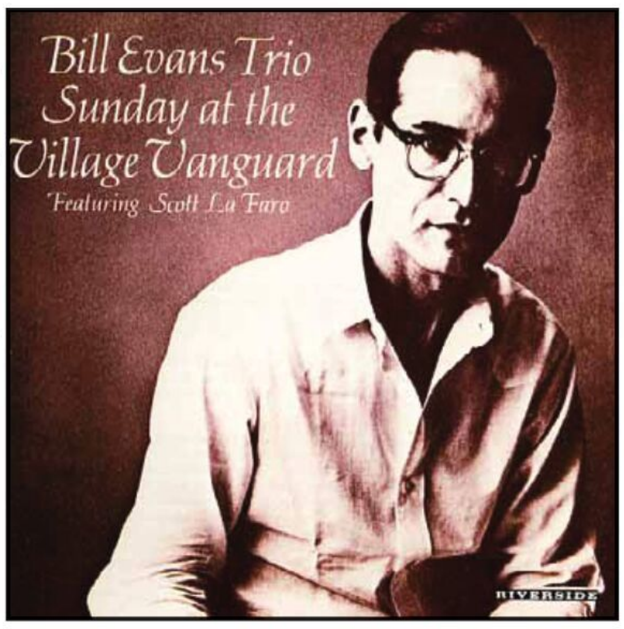
Competitors

Preamplifier:
· NEM PRA-5 Endverstärker:
· Silvercore Collector‘s Choice

Ivo Linnenberg undoubtedly has his own concrete ideas of how hi-fi equipment should be implemented at the premium level. His designs are evident in many places - especially the „GPT“ (there was a predecessor model that was simply called „Telemann“) has it all. To merely call it a preamplifier only touches the core of the matter - to at least the same extent, it is a D/A converter on the highest level. The GPT is not a preamp with alibi USB boards but a very capable converter machine. Allow me a short excursion into the realm of bits and bytes: Linnenberg relies on the ESS 9038, the top model from the specialist ESS, for the conversion. Eight channels are on board, which play perfectly into Linnenberg‘s uncompromising approach to the subject of symmetry: He needs four independent converter paths. Two for each channel, one with non-inverted, one with inverted polarity. In this case, this many-legged gem can be fed with data in USB, S/PDIF, AES/EBU, and Toslink formats. Data rates of up to 384 kilohertz and resolutions of up to 32 bits are possible, as well as DSD with a maximum sampling rate of 512. That is about all that is possible nowadays.



This is the preamplifier‘s control unit. Probably further down on the board, the D/A converter is hidden



Bill Evans Trio – Sunday At The Village Vanguard

What we played

Bill Evans Trio
Sunday At The Village Vanguard

Hazmat Modine
Extra – Deluxe – Supreme

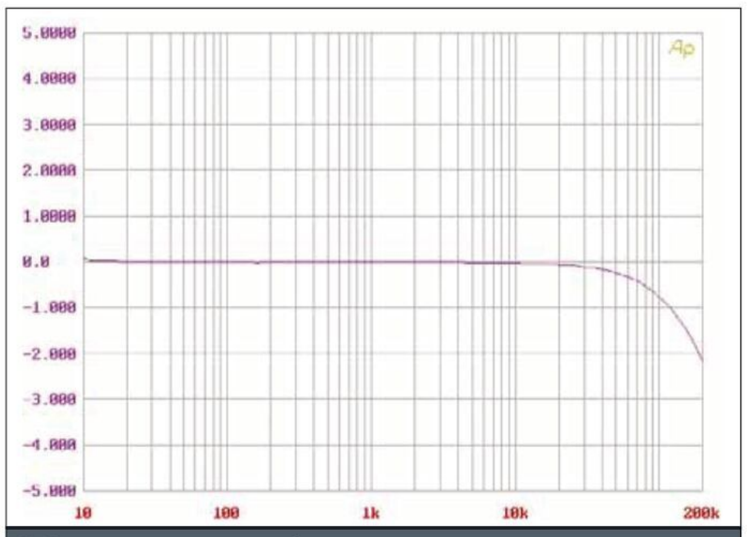
Led Zeppelin
How The West Was Won

Nina Simone
A Single Woman

However, we are more interested in the analog part of the device. This is just as consistently designed with four paths. In terms of connection diversity, we have to be satisfied with less than the standard due to the numerous digital inputs: Two XLR and one RCA input have to suffice, which they should in most cases. Since Ivo Linnenberg is serious about symmetry, the RCA connector is actually a balanced input as well: Here, the ground of the RCA jack is simply considered an inverting connection, which benefits low-noise performance.

The absence of any control elements on the front of the device - except for the standby button - reveals that the GPT's operation is somewhat different from usual. Everything else on the GPT has to be done via remote control. This is a blessing and a curse at the same time - I was constantly looking for the small, solid aluminum latch with the four buttons. With two buttons, you can operate the 100-step relay volume control; with one, you can switch through the seven inputs, and the last one mutes the output. The large red LED dot matrix display provides information. It switches off again a short time later. There is nothing more to operate. Naming inputs, balancing SPL, adjusting channel balance - nothing there. Linnenberg has deliberately limited operational options to the essentials.

He took a similarly consistent approach to the mono power amplifiers named after George Frideric Handel. Their stately lateral heatsinks contribute to each monoblock's 20-kilogram weight. That's still civilized by comparison, and there's a reason for that: The amplifier is powered by a switching power supply, so there's no need for a massive transformer. Linnenberg builds in an exciting trick after the switching power supply: It electronically reproduces large filter capacities, which guarantee the amplifier sufficient current reserves and slow down high-frequency interference from the supply. Sixteen powerful MOSFETs provide the power, and there are enough of them: We measured



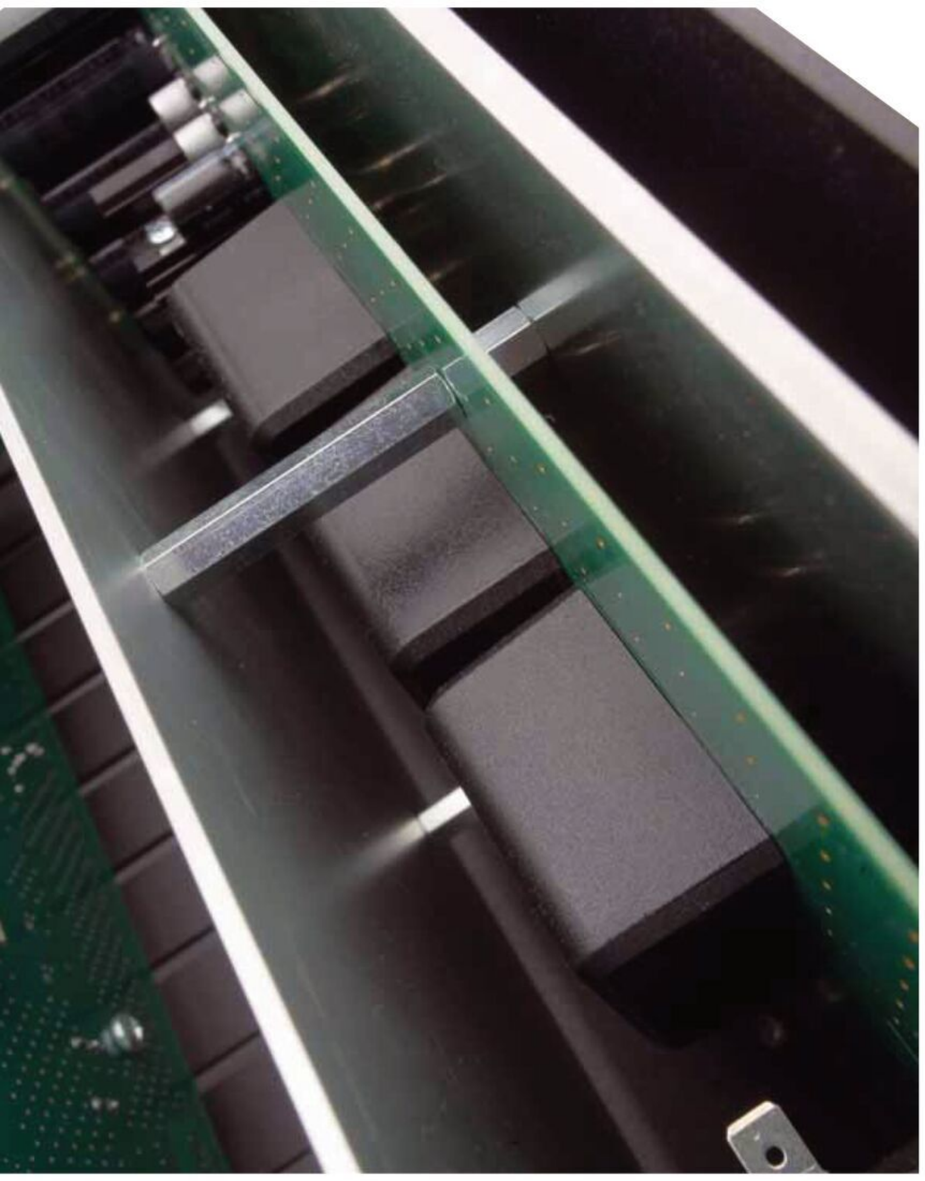
Measurements

Lab commentary

Both components impress with high bandwidth, the preamp even a bit more (clearly above 200 kHz) than the power amp (slightly below 200 kHz). The preamp is outstandingly low-noise. We measured 106 decibels(A) and channel separation of 92 decibels. At one volt at the output, it produces a distortion of 0.003 percent. The power amplifiers behave similarly exemplary: 110 and 100 decibels (A) extraneous voltage separation at one watt into eight / four ohms, including 0.0002 and 0.002 percent distortion, respectively. The preamp consumes a constant 38 watts of power, and the power amps just under 60 watts each in idle.

The power amplifiers are equipped with XLR inputs only. The preamplifier still has RCA connectors

This design is standard for Linnenberg‘s top series: All functional groups are located on separate plug-in cards



125 watts at eight ohms and 250 watts at four ohms – the exact doubling speaks for an incredibly stable power supply. Despite the massive use of heat sinks, Linnenberg chose a „civilized“ operating point: With a power consumption of just under 60 watts per channel, the Handel‘s Class A range should be relatively small. The circuitry is similar in both the preamp and power amp; Linnenberg relies on a mix of integrated components and single semiconductors where it is conducive to performance and consistently symmetrical from the first to the last screw. The measurement technology proves him right – the Linnenbergs are among the best we‘ve ever had in our hands in the lab.

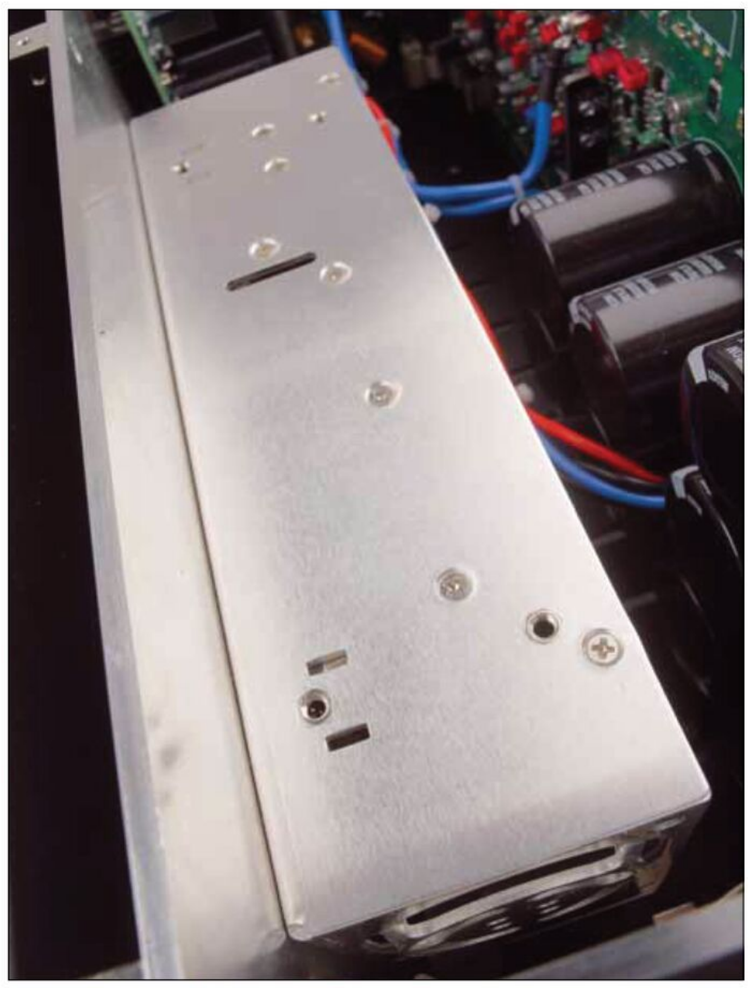
And in terms of sound? At first, I was worried about whether my high-efficiency horn combo could work with such „big guns.“ A fear that the amplifiers from

The preamp is also powered by several small switching power supplies

This is a quarter of the power amp transistors of a monoblock

Schwerte quickly dispelled. The GPT and Handel play wonderfully fluid and smooth, with a minimal warm touch. There is no trace of the harsh touch of typical transistorized amplifiers here. At least on paper, the „Ella," our very ambitious two-way project with around 89 decibels of efficiency, fits better. The Linnenbergs' smoothness and expressiveness were just as present here. Only the tonality changed a bit: It sounded straighter, and the shot of warmth in the lower regions was no longer perceptible. However, the character of the Linnenbergs is equally evident in both transducers: They indulge in an extraordinarily light-footed and detailed way of playing, which quite often reminds me of good tube amplifiers. Extremely relaxed and easygoing at Bill Evans' Sunday concert at the Village Vanguard, with great separation of the musicians from the hustle and bustle of the audience. They probe deep, very deep into the groove; no detail is lost here. The fireworks that the multi-headed Hazmat Modine troupe used to burn off convincingly demonstrate the combo's fine and coarse dynamic qualities: It's as fast as an arrow and so natural and casual that you don't even begin to think about power. Big amplifiers that don't sound like big amplifiers in the best sense of the word – what more could you want?

Holger Barske



A pleasantly lightweight replacement for a bulky toroidal transformer is this switching power supply in the power stage

Linnenberg Georg Philipp Telemann / Georg Friedrich Händel

- **Price:** approx. 17800 / 24,800 EUR
- **Distribution:** Len HiFi, Duisburg
- **Phone:** +49 2065 544139
- **Internet:** lenhifi.de
- **Warranty:** 2 years
- **Dimensions:** 255 x 2200 x 445 mm (W x H x D)
- **Weight:** approx. 12 / 20 kg

lp

Linnenberg Georg Philipp Telemann / Georg Friedrich Händel

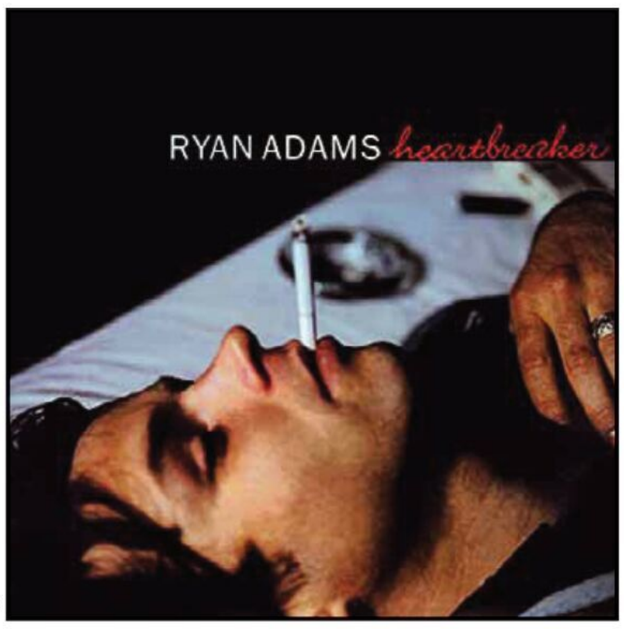
International 2/22

» Linnenberg's top preamplifiers and power amplifiers pick up where the fantastic „Bach" phono preamplifier left off: with an outstandingly transparent and fast sound.

Wonderfully Playful

Sometimes you just have to shout „here“ really fast - for example, when the first pictures of this integrated amplifier appeared, which looked like its makers didn‘t give a damn about any conventions

PURE DIRECT
OFF
ON
A
B
OFF
SPEAKER OUTPUT
SELECTOR
ON
OFF
ON
OFF
DIMMER
SUBSONIC
ATTENUATOR



Ryan Adams – Heartbreaker

What we played

Ryan Adams
Heartbreaker

Neil Young
Live At Massey Hall 1971

My Sleeping Karma
Tri

Willy De Ville
Unplugged In Berlin

Initially, I was inclined to begin this story with the three capital letters W, T, and F, followed by at least three question marks. However, since we are among well-behaved people, I'd better elaborate. The thing in front of me, which very convincingly generates sounds with the help of two boxes called „Ella," lo,"s like a Nagra designer on crack developed it. The word „integrated amplifier" only begins to apply to what the Korean designers have laid on keel here. The manufacturer is called „HiFi Rose" and has primarily attracted attention with cutting-edge streaming devices with full-surface touch-screen displays, which are very chic and work well, by the way - in case you are interested in something like that.

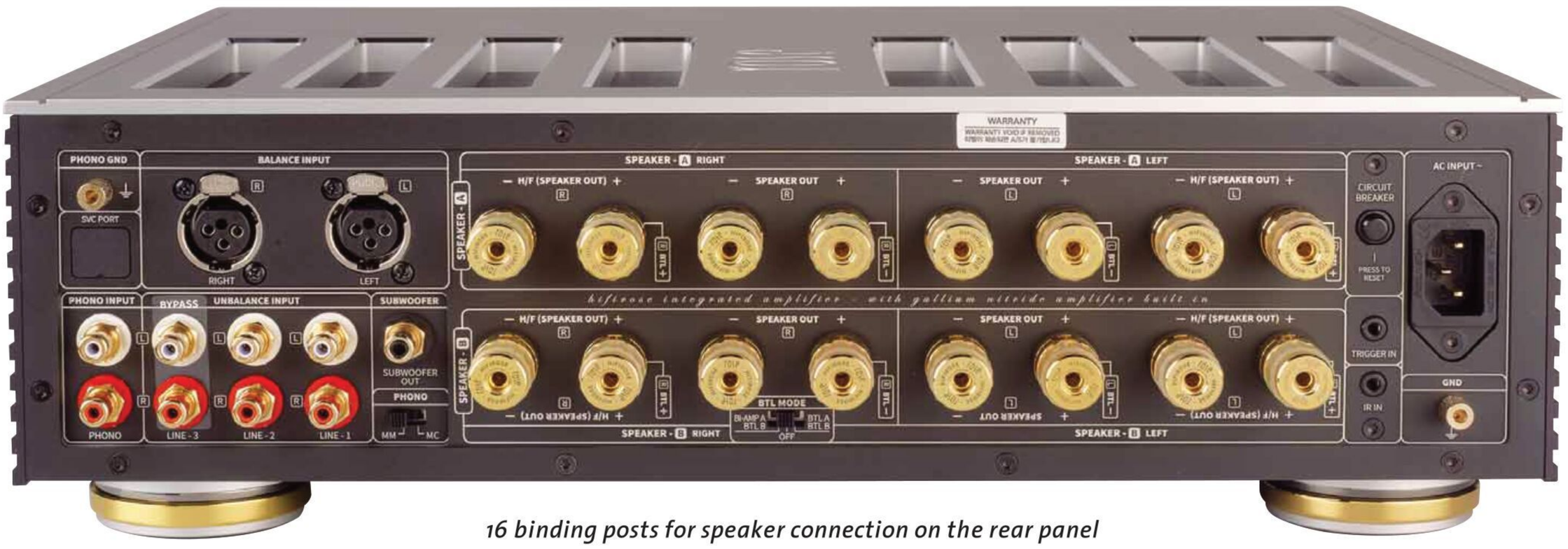
This one, however, is light years away from streamers, yet hardly less modern than them. It is an integrated amplifier with four power amplifier channels. Switching amplifiers in gallium nitride technology. In bridged mode, there are easily 400 watts per channel. And here it comes: The thing has a phono input. MM and MC-capable. With a whole armada of switchable equalizer curves, to be able to reproduce also the record cut after the crudest characteristic curve correctly. But that's not all that the 7000 EUR device, wrapped in really chic aluminum and limited to 300 pieces, can be persuaded to do.

Measurements

Lab commentary

The RA180 also has a lot to offer in the measurement lab. The frequency response isn't highly linear, but the round decibel deviation from the norm over the listening range shouldn't be a big deal. The device delivers an external voltage gap of 83.3 decibels(A) at five watts at the speaker level input, and the channel separation is at least on the same level. The frequency response runs up to around 60 kilohertz, which should be enough. Power is available in any case: The device manages 183 watts into eight and 324 watts into four ohms per channel - that should be enough. As is typical for a switching amplifier, the power consumption is low and is around 52 watts without a signal at the input.

With so much high-tech, one might suspect that signal processing is more or less done digitally. But the RA180 is a purely analog amplifier. Well, almost: Of course, the device is Wi-Fi enabled and can be controlled remotely with the corresponding app and integrated into the Rose universe.

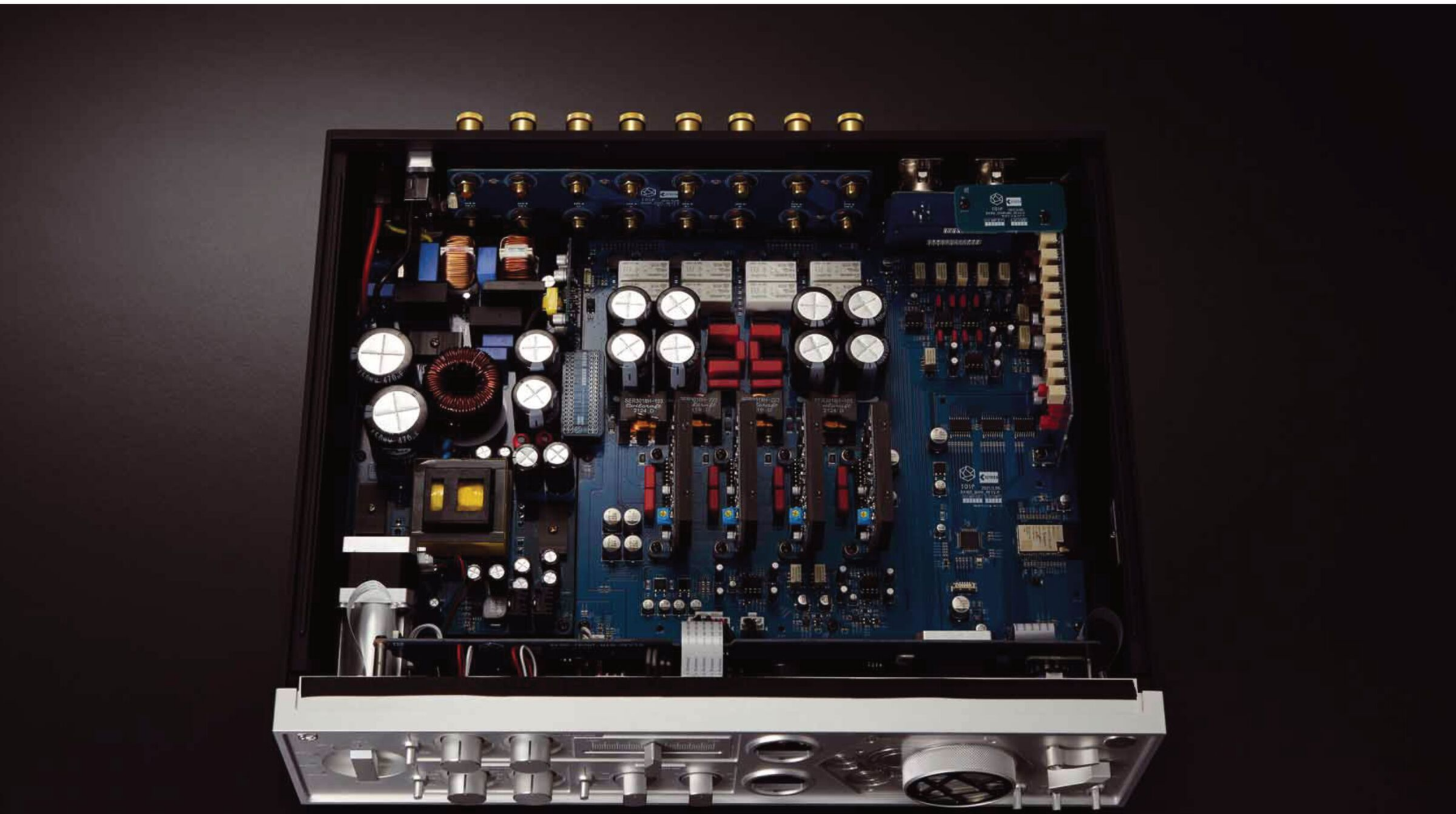


16 binding posts for speaker connection on the rear panel

Nice contrast to the rest of the design: the balance slider

Unfortunately, I can‘t open the device without using a cutting tool. It‘s screwed with M3 countersunk Allen screws, and they definitely deserve to be erased from the face of the planet. Once tightened with a bit too much torque, you won‘t be able to get them out again without destroying them - especially if rather soft steel is used, as is the case here. Therefore, we have to make do with the one picture of the device‘s interior that the manufacturer provides.

The RA180‘s looks are polarizing by nature: Either you love the slightly crude mixture of steampunk borrowings, Swiss studio appeal, and classic eighties HiFi aesthetics, or you turn away in horror. I‘m in category 1, and when it comes to hi-fi, I‘m down for anything that isn‘t boring. Let‘s work our way through the machine from left to right. First, there is the input selector switch, where one can argue whether a Nagra design or an early MBL preamplifier was the inspiration. But you



The four power amplifiers in the middle of the unit are tiny considering their power output

don‘t have to. You can simply enjoy the rich click of the switch and the handy knob that recesses into the front. It can switch between three unbalanced and one balanced line input and the phono input. Of course, everything is neatly switched by relays, which are activated with a delay so that nothing pops when switching. To the right are classic preamp functions that can be activated with a toggle switch on the left. You have access to a bass, treble, and balance control when you do that. The first two are designed as rotary potentiometers, the latter as a slider. This works perfectly, but the sound is not entirely neutral, even in the center position. Never mind, that‘s what the bypass switch is for. If you activate the illumination option of the device, the bass and treble controls get a nice „light pointer effect.“ Below that, the „Crossover“ section comes into play. If you were hoping for a fully parameterizable two-way active crossover (like me, for example), I have to disappoint you. The feature is intended to drive an additional tweeter on a pair of outputs.

The corresponding active high pass can be parameterized with the two knobs: The left one selects the lower cutoff frequency between 580 Hertz and six kilohertz, and the right one sets the corresponding level. This is a pretty unique feature. To its right, things get interesting for phono fans because that‘s the setting field for the switchable equalizer curves. This works

differently from other approaches because you can set two parameters: the transition between the lower time constant and the roll-off at ten kilohertz. The manual lists nine pairs of values for the most common curves, which should be enough to get by. It is not entirely clear why the equalizer, which is only effective via the phono input anyway, has been given a separate bypass switch. And anyway, the phono input. It manifests itself in the form of two RCA sockets, a ground terminal, and a slide switch on the back of the device. The latter switches between MM and MC operation. The specified amplification factors are 43 and 63 decibels, which fits. Unfortunately, the fact that only an input impedance of 47 kilohms is available in both MM and MC mode spoils the fun. Nice for MMs, not so much for most MCs. They acknowledge the attempt in most cases with a thin, streaky sound. Occasionally this can work, but that is the exception.

We continue with the two pretty round level meters. They display the level of the selected source, so their deflection does not change with the position of the level control. Next to it, to the right, is the wonderfully exaggerated showpiece of the device: the volume control. No matter how ordinary the potentiometer behind it may be, the ornate gear with the rack-and-pinion level meter is the absolute eye-catcher, including the asymmetrically spoked knob. The clearly Nagra-inspired toggle switch to the right switches between the two „speaker banks." Parallel operation of both sections is not possible. The curved knob above it bypasses the entire preamp section, and you can directly drive the power amps. This is not entirely hazard-free, so there's a warning sticker.

Three toggle switches remain on the bottom right: One switches the tasteful and dimly warm illumination in two stages, one a subsonic filter - interestingly for all sources - and one lowers the SPL to a level suitable for telephony.

In addition to the five inputs, the device's rear offers an RCA subwoofer output that cannot be further adjusted and eight pairs of thick binding posts for the speaker connection. Only the upper or lower row is always active - you remember, the corresponding switch on the front. Four outputs belong to one power amp output each and can be operated „quite normally" - the manufacturer calls it bi-amping - in conjunction with the active tweeter filter or in bridged mode, which helps the unit to get some serious power. I did the listening test with two power amp outputs in simple stereo mode.

Teammates

Turntable:
· TechDAS Air Force III / Reed 3p / Reed 1x

Cartridges:
· DS Audio DS 003
· Ortofon Per Windfeld Ti

Phono preamplifier:
· DS Audio DS 003

Transformer:
· Sculpture A Mini Nano ·

Loudspeakers:
· DIY Focal / JBL
· Klang + Ton Ella

Competitors

Integrated amplifier:
· Line Magnetics LM845 IA

Preamplifier:
· NEM PRA-5

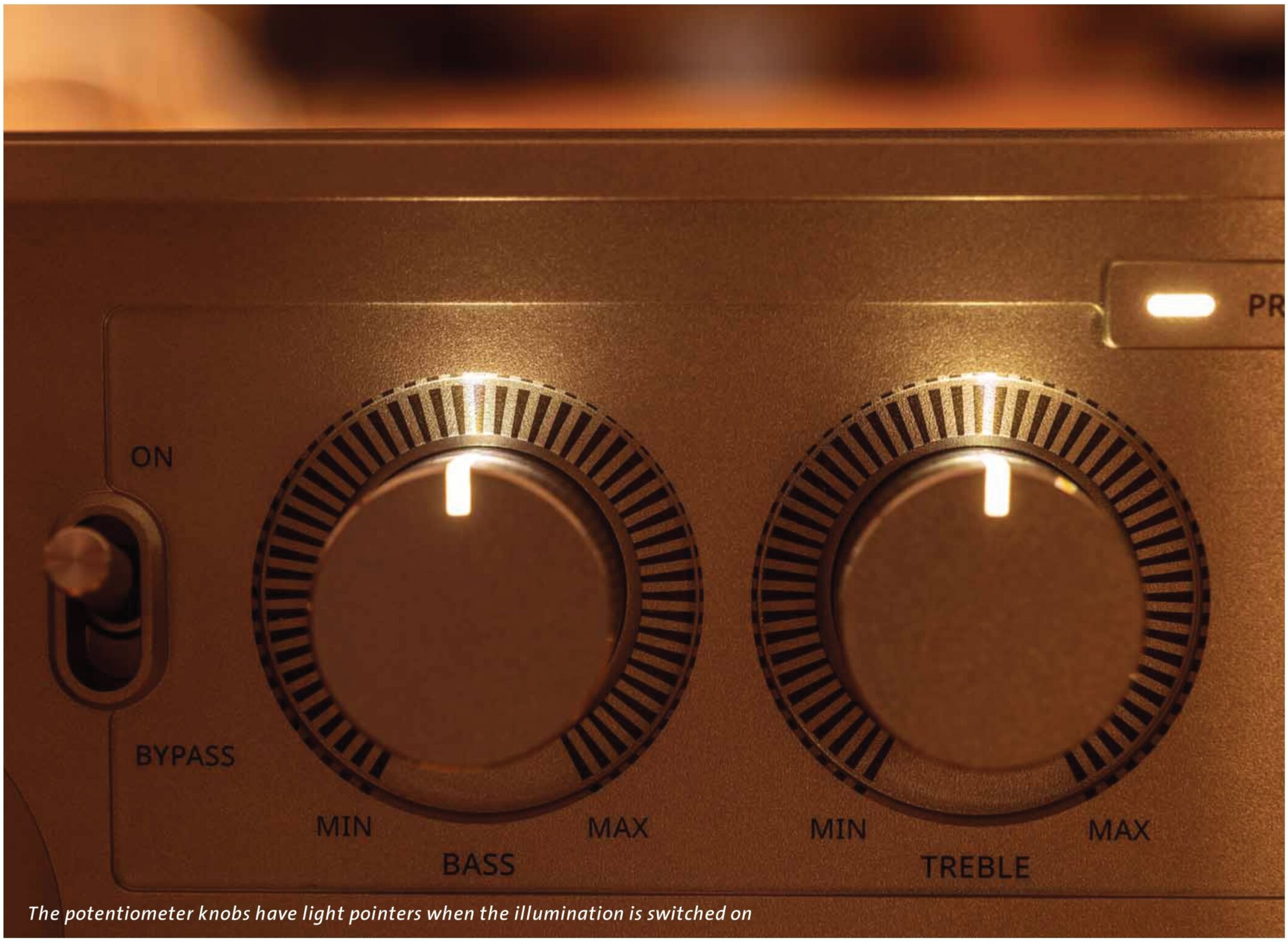
Power amplifier:
· Silvercore Collector's Edition

The front panel of the device is pure provocation – great!

We still need to talk briefly about gallium nitride. This is an increasingly interesting semiconductor material that can be used to realize very low-loss power MOSFETs. They are used on the four power amplifier modules arranged in the center of the device. Despite their considerable power, the modules are almost cutely small and hardly need any heatsinks worth mentioning. Of course, the whole thing is powered by a modern switching power supply that occupies the left third of the case. The analog low-level signal processing sits to the right of the power amp section.

I admit that I thought the device was a bit of an overkill gimmick at the beginning, but I quickly revised that impression. As I type these lines, early Ryan Adams is playing behind me via Ortofon Per Windfeld Ti and transformer on the MM input of the RA180, and I realize: Damn - this is not bad! It sounds fluid, and it has rhythm, timing, and contour. It has been shown that switching amplifiers sound better when challenged a bit. That said, too much efficiency is not good. On my standard three-way speakers at around 96 decibels, they don‘t sound bad, but a bit boomy and exuberant, with too much upper bass. This improves noticeably when listening loud, but you don‘t always want that. Five to eight decibels less efficiency, and the Rose amplifier is in its element. The ratios are proper, the bass gets a certain smoothness, and the upper range has more air. The ensemble pulls off huge rooms and seems extremely stable, which is excellent for Neil Young‘s Massey Hall performance from 1971, for example. My favorite Stoner rockers, My Sleeping Karma, celebrate lovely ambiance. I miss only very little smoothness and attack of single-ended triodes - that‘s far more than I can claim from the vast majority of solid-state amps.

Holger Barske



The potentiometer knobs have light pointers when the illumination is switched on

Hifi Rose RA180

· Price: approx. 7,000 EUR
· Distribution: Higoto, Essen
· Phone: +49 201 8325825
· Internet: higoto.de
· Warranty: 2 years
· Dimensions: 430 x 110 x 350 mm (WxHxD)
· Weight: approx. 16,7 kg

Hifi Rose
RA180

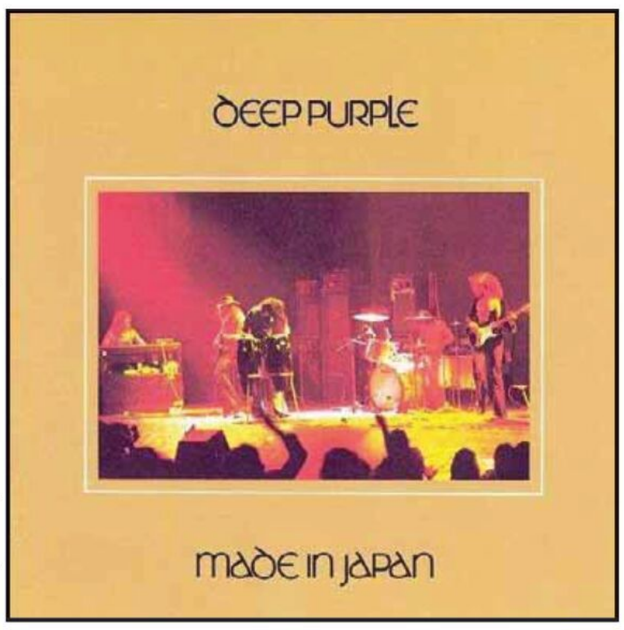
International 2/22

» The surprise integrated amplifier from HiFi-Rose is a feature-packed device that wants to be different. Not every idea hits the spot one hundred percent, but its powerful, fluid, and smooth sound justifies the original concept.

LYRAVOX
HAMBURG

Digital Speaker – Also for Analog Lovers

Lyravox is a small but sophisticated manufacturer from Hamburg, Germany, delighting the world with speakers of a different kinds for years. High time to take a closer look at them.



Deep Purple – Made In Japan

What we played

Deep Purple
Made In Japan

Anouar Brahem
Blue Maqams

Steely Dan
Aja

Glowsun
Eternal Season

The offset reflex tube is tuned away from the textbook opinion

Lyravox saw the light of day in 2013. Founded out of the creators‘ dissatisfaction with the music playback products existing on the market, experienced speaker designer Jens Wietschorke and economist Dr. Götz von Laffert decided to turn their vision of a modern music playback system into reality and market it.

The first Lyravox products were integrated solutions that combined every conceivable functionality and speaker for stereo playback into a single device. This included an in-house streaming solution, powerful switching amplifier technology, and crossovers with digital signal processors. The visually unspectacular but technically and sound-wise very sophisticated devices of the „Stereomaster“ series still exist in the company‘s program. Still, the product range now also offers less radical solutions. At Lyravox, this is called the „K Series“ and offers concepts for people who are open to somewhat more classic expressions of high fidelity. And you‘re quite right in guessing that it took just such a thing to get me to put one of these in my living room for testing.

You don‘t find that often: an Accuton ceramic tweeter in a custom-made waveguide

„Karlos“ is the second smallest model of said K-series, the most compact floorstander in the Hamburg-based company‘s lineup. The point is that there is considerably less modern technology in it than in the other Lyravox products. That is to say: The brand new „Karlos Analog“ at the introductory pair price of 10800 EUR is an almost conventional pair of active speakers that want to be driven by a classic analog preamplifier. In other words: Something

A good choice: a ten-inch driver from Scan Speak takes care of the low-frequency range

like this gets along with a turntable without any problems, which is the fundamental prerequisite for a presentation in this magazine. The interior of the unusually styled loudspeakers is ultra-modern – in other words, digital – but that need not bother the user. They simply plug their RCA or XLR cables into the box for control and can get started. Wait, wait - not quite. While the speaker is functional as is, it doesn't realize its full potential until it's calibrated to the room it's supposed to fill with music. For this purpose, the builders travel with a measuring microphone and notebook and, in consultation with the new owner, create a profile that best suits the room's acoustics or taste. Three of these setups can be stored in each loudspeaker and selected simply by pressing a button. All three memory locations are occupied with a balanced setting in the original state.

Teammates

Turntable:
· TechDAS Air Force III / Reed 3p
· Sonoro Platinum SE

Phono preamp:
· MalValve preamp three phono
· VTL TP2.5i

Preamplifier:
· Linnenberg Georg Philipp Telemann
· NEM PRA-5

Power amplifier:
· Linnenberg Georg Friedrich Handel
· Silvercore Collector's Edition

Integrated amplifier:
· Grandinote Shinai
· Cambridge Edge A

Competitors

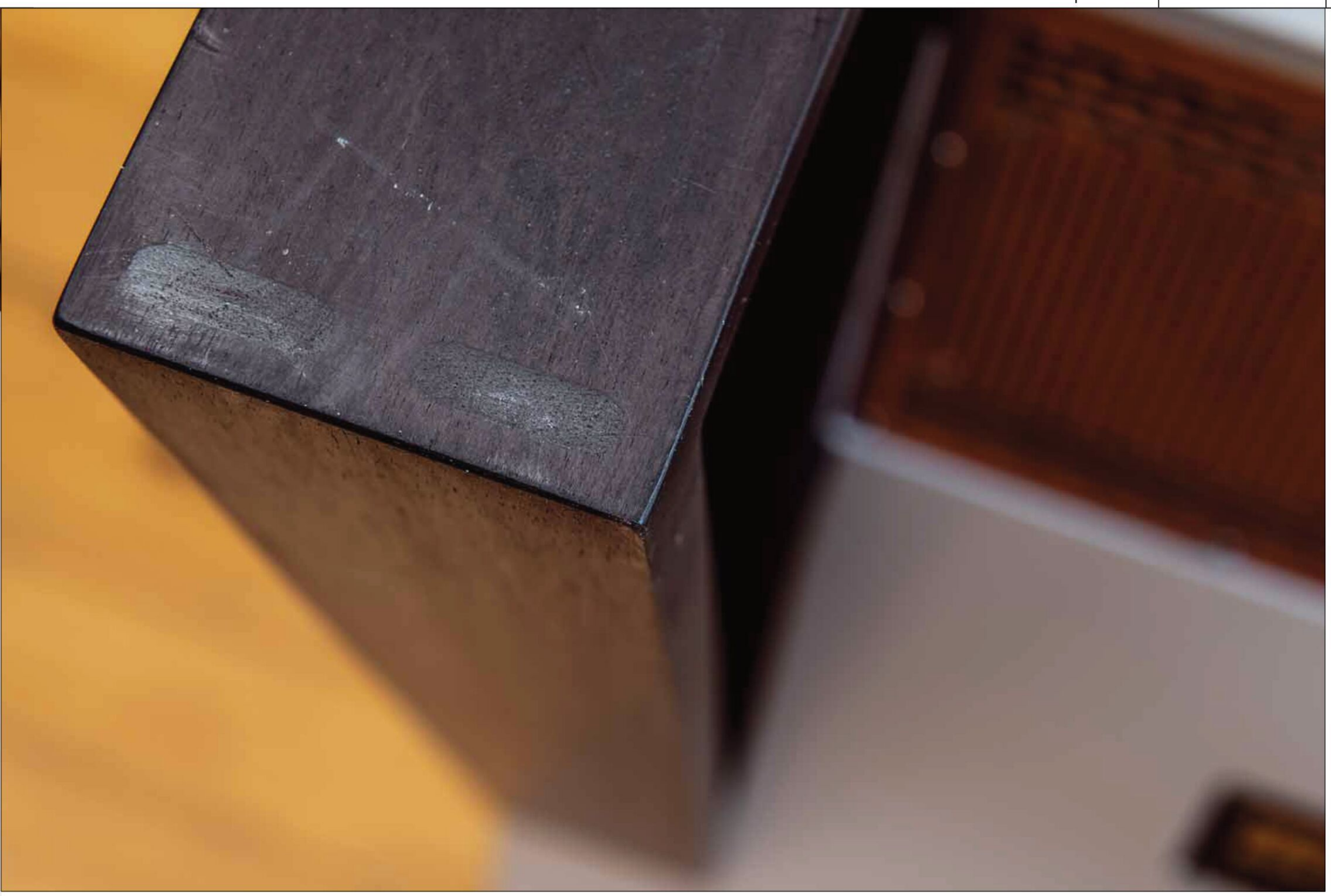
Speakers:
· DIY Focal / JBL

Cartridge:
· Nagaoka MP110
· Ortofon Windfield Ti

In the middle of the calibration process: The Lyravox gentlemen at work

Like the bass, the AMT is protected by a grille and radiates upwards

The connection panel of Karlos Analog: no access for digital sources



For wood professionals: the stands are assembled with fine and extremely stable domino dowels

Karlos is an unusual speaker visually. It‘s debatable whether it‘s a two-way or three-way design; the cabinet is just a little more than knee-high and tilted backward by a firmly screwed bracket. The depth of the speaker is very shallow at 18.5 centimeters, which undoubtedly suits it very well optically. This has consequences for the net volume: The woofer of the Karlos has to be content with less than 30 liters, which is not too much for the full-grown ten-incher. However, amplifier power is available here in abundance (500 watts per speaker distributed over two channels), and there is a DSP crossover that can easily compensate for the low volume. The Lyravox designers are staunch supporters of modern drivers with stiff cones, so at this point, there‘s a Scan-Speak woofer with an aluminum diaphragm, which has two glued-on dampers specifically to keep out mischief. A specialty from Accuton handles the high range. For the famous 30-millimeter ceramic dome, Accuton manufactures a very special horn attachment for Lyravox. This waveguide allows the tweeter to be coupled lower without stress, which has proven advantageous here. The third transducer is the AMT tweeter that radiates upwards and hardly contributes to the sound in terms of tonality, as Wietschorke demonstrated by covering the two tweeters in operation. Instead, it adds to the atmosphere of the presentation and the room imaging to an astonishing degree: without the AMTs, it sounds pleasing, concentrated, and correct. However, the stage opens up with them, and the sound breathes better. However, I would not attest to „more treble“ to what is happening. By the way, the AMT is firmly coupled to the front-firing tweeter with a passive filter. The bass cabinet is ventilated with a reflex tube exiting at the bottom. However, it does pretty little in the bass itself due to its tuning. Instead, it reduces the spring stiffness of the air volume in the midrange, from which the reproduction in this range should benefit significantly.

The aluminum bass diaphragm is calmed with damping stickers

Due to its low height, the speaker needs a certain rearward tilt to deliver realistic size imaging. The matte black solid wood stands, which are firmly screwed to the cabinet, take care of exactly that and provide the necessary ground clearance for the vent. In the „Pure“ version, Karlos has various digital inputs, can be volume controlled via remote control, and needs a signal input only on one side. An additional (digital) line then provides the transport of the relevant information to the second box. The „analog“ version here doesn‘t have all that, so it costs EUR 1000 less per pair than usual.

The sound setup process can take more or less time. It depends on how problematic the room is and how exactly the new owner knows what they want. The designers explicitly point out that the DSP is not a panacea and that corrections are only possible within certain limits. In my case, however, these limits have proven to be sufficient. And as a listener who has found his soundwise peace with tube amplifiers, compression drivers, and other rather extreme high-efficiency constructions, I have to say: This one works. And quite excellently. Let‘s start the round with an absolute classic that doesn‘t seem to fit the box: Deep Purple‘s immortal live album „Made in Japan.“ After a few seconds, it is clear that the box knows how to handle this. The few seconds of applause at the intro to „Highway Star“ show the whole hall, it sounds extensive and detached. John Lord‘s Hammond organ has this exceptional tone that only he could elicit. And at the latest, when Ritchie Blackmore saws into the action from the left in his inimitable way, it becomes clear: Yes, it can. It sounds powerful, with the tonal „fat paddings“ in the right places, and here lies quite clearly one of the great strengths of this concept - enormous clarity and transparency. This is already a big surprise because this album is not widely known for such qualities. The Lyravoxes, however, really dig deep into the groove - quite impressive.

Let‘s put on Anouar Brahem, one of the absolute masters of the Arabic lute called „Oud.“ Here, too, Karlos immediately draws attention with a snappy pace and a lot of oversight. It breathes, lives – that is, I hardly dare to say – not so far away from my proven compression driver plus horn setup. In the bass, my Mini-Onkens can still score; they simply have significantly more volume. The energy of each string break, the mellowness of the cymbals - that‘s good. Django Bates‘ piano has body and weight and sounds extremely fine and homogeneous. The whole thing is very high-end and balanced – here, the individual setup has undoubtedly paid off. So digital technology works if you do it right - and the Lyravox people know how to do it. And they do it so that you notice absolutely nothing except music playback on a very high level.

Holger Barske

Lyravox Karlos Analog

· Price per pair: approx. 10,800 EUR
· Distribution: Lyravox, Hamburg
· Phone: +49 40 320897980
· Internet: Lyravox.com
· Warranty: 2 years
· Dimensions: 400 x 875 x 370 mm, with stands (W x H x D)
· Weight: approx. 22 kg

lp

Lyravox
Karlos Analog

International 2/22

» The brand-new „Karlos Analog“ starts with fine technology and precise room adjustment to convince even digital muffle of the blessings of modern signal processor technology. Immensely transparent, spacious, and coherent – a real alternative to classic solutions.

DS 003

The Twilight of the Cartridge Gods

After having experienced the 55,000-EUR-vision of the Japanese manufacturer DS Audio for the future of record scanning about a year ago, it‘s getting serious now.

John Coltrane – A Love Supreme

What we played

John Coltrane
A Love Supreme

Tool
Fear Innoculum

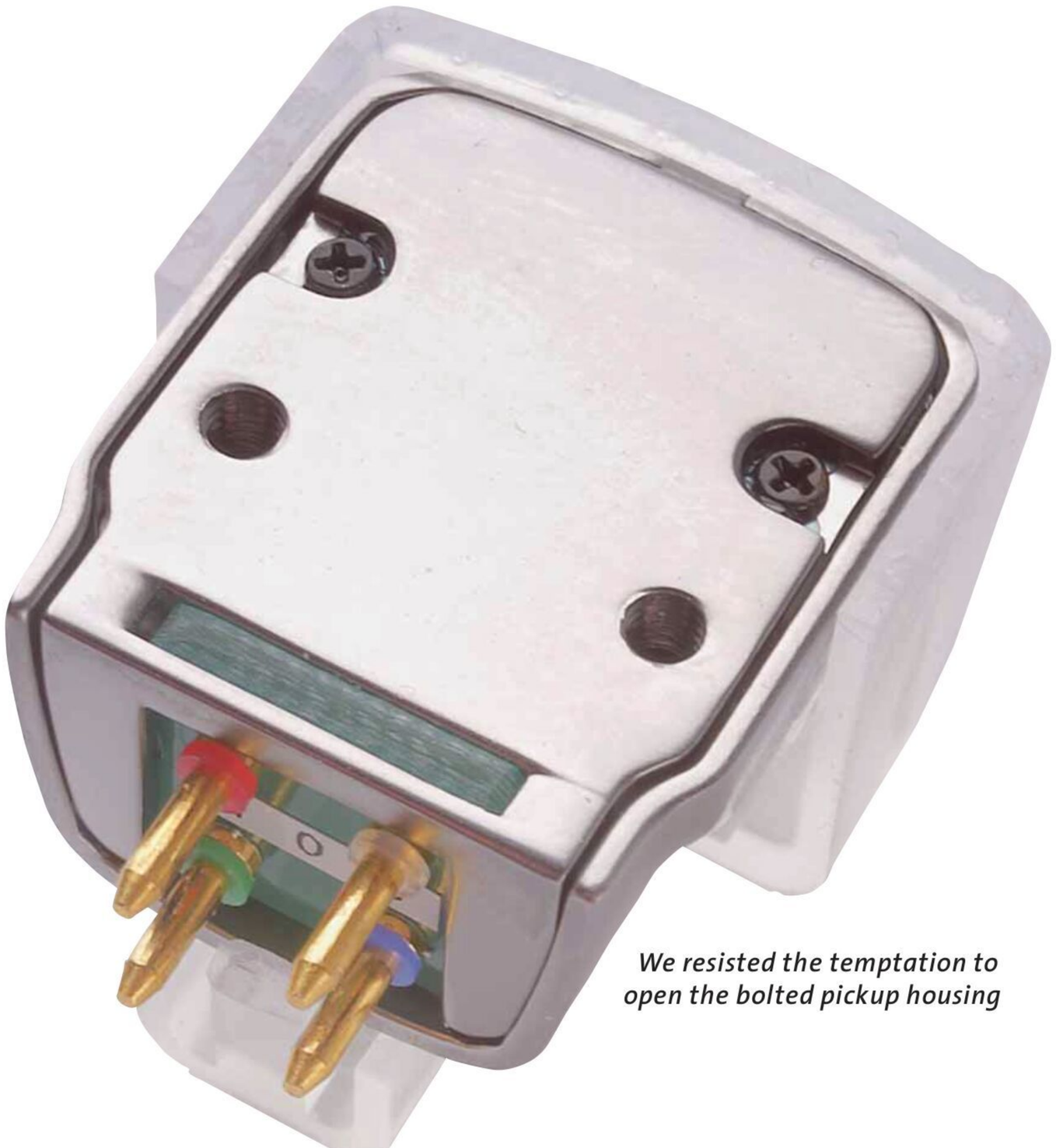
Ten Years After
Recorded Live

Nightmares On Wax
In A Space Outta Sound

Yes, that was an experience. And I enjoyed every minute I spent with this completely bonkers ensemble of an electro-optical cartridge and a two-piece lunacy power supply. Which, considering the price tag, was a pleasure I was pretty much alone with, though. However, there's an excellent opportunity that things are changing. With the DS 003, DS Audio has presented a model that is said to have inherited a lot of the top model's merits but has precisely one zero less on the price tag. That is 5,500 EUR, including the special power supply and phono equalizer, without which the cartridges of this manufacturer cannot be operated. Indeed, that's still a lot of money, but it puts the matter much closer to this side of the world. In addition, DS Audio cartridges can now be officially purchased separately and combined with equalizers from other manufacturers. There aren't too many of these yet, but there are more and more signs that this will change soon. The DS 003 cartridge alone costs precisely half of the complete package, namely EUR 2,750. And with that, it plays in the league of a whole series of MC cartridges, against which it has good prospects - this much in advance.

Like all DS Audio cartridges, the DS 003 also emits light during operation, namely deep blue light that penetrates through the gap at the front of the housing. This is because DC voltage, which is technically indispensable, is present here to power the light show. Please forgive me for briefly explaining the principle of operation of the electro-optical cartridges, as it will not have gotten around to every reader yet: Classic cartridges work according to the principle of electromagnetic induction. An electric current flows in an electrical conductor when exposed to a changing magnetic field. In the classic cartridge, said conductor is a coil. Either the stylus cantilever moves it in the magnetic field of a fixed magnet (MC cartridge), or the magnet is moved and the coil stands still (MM). In the case of the cartridge realized by Toshiba as early as the seventies, a „paddle" is attached to the stylus cantilever, which is immersed in the beam of a light barrier. Depending on the deflection of the stylus cantilever, more or less light falls on the corresponding receiver; these changes in brightness correspond to the signal on the plate. Toshiba still had to use an incandescent lamp as a light source (which was not very reliable); DS Audio naturally uses light-emitting diodes. In combination with modern photodiodes, the technology has proven very reliable. The „Grand Master" model mentioned initially was the first representative of the third generation of DS Audio electro-optical cartridges. The DS 003 is now the second model to benefit from the latest developments. Independent light sources and receiver diodes are used here for the left and right channels for the first time. The new arrangement ensures a significantly increased output voltage (70 instead of 40 millivolts), and it also substantially improves channel separation.

The cartridge is enclosed in a housing made of an aluminum alloy especially suitable for this purpose



We resisted the temptation to open the bolted pickup housing

Teammates

Turntables:
· TechDAS Air Force III / Reed 3p / Reed 1x

Phono Preamplifiers:
· MalValve preamp three phono
· DIY with valves

Preamplifier:
· NEM PRA-5

Power Amplifier:
· Silvercore Collector's Edition

Loudspeakers:
· DIY Focal / JBL
· Cambridge Edge A

Competitors

Cartridges:
· Ortofon Per Windfeld Ti
· Lyra Etna

The manufacturer speaks of an increase of ten decibels at high frequencies. Seventy millivolts of output voltage are in the order of magnitude of high-level sources, making equalization and preamplification much easier.

The new arrangement also meant that the paddle responsible for shading the light beams could be significantly smaller and lighter. Whereas aluminum was used in the past, a V-shaped beryllium sheet is now mounted on the stylus cantilever. The re-

The equalizer is at least visually a scaled-down version of its counterpart from the Grand Master model

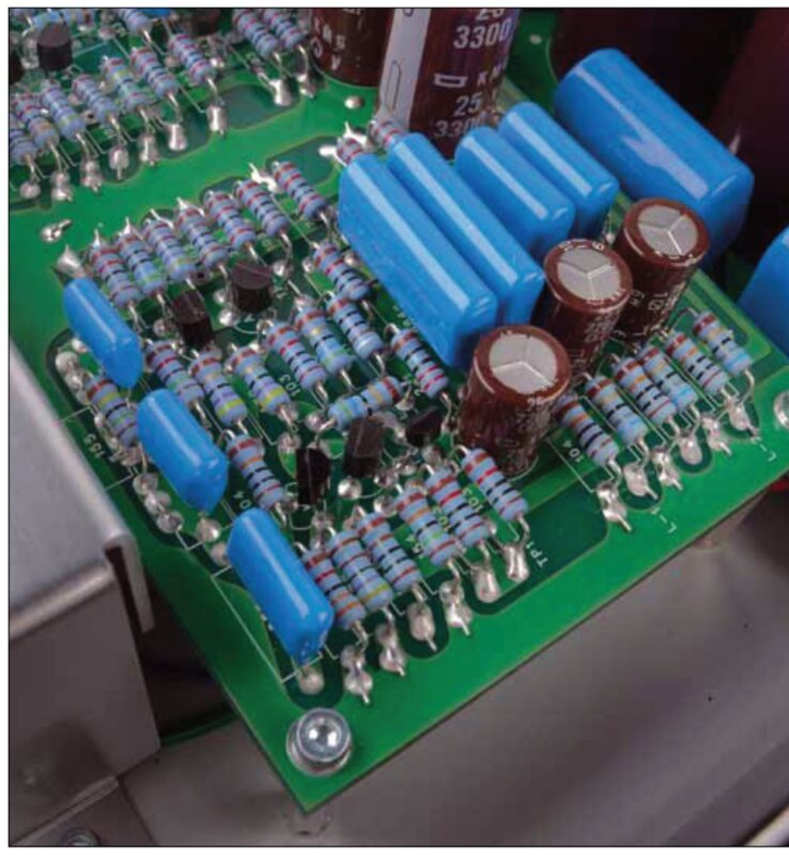
ward for the effort: a weight reduction by more than half, from 1.56 to 0.74 milligrams. The moving mass of the DS 003 is now in the range of a tenth of what an MC cartridge has to carry around.

The stylus cantilever of the DS 003 is an aluminum model, and a diamond with a Line Contact cut sits at its end. This is one of the few differences to the Grand Master, which uses a diamond needle carrier. The cartridge‘s housing is made of a rigid aluminum alloy, and the design is meant to provide maximum rigidity. The 7.7-gram cartridge wants to be used with 2 to 2.2 grams of contact force. Its needle compliance is in the medium range, which suggests using medium-weight tonearms.

We also find the blue-glowing wedge on the front of the corresponding equalizer, which looks like a scaled-down version of one of the Grand Master feeders. In general, all cartridges work on all in-house equalizers at DS Audio. The one on the DS 003 has an effortless job on paper because it needs to amplify even less than the units for the older cartridges. This is the reason for the DS 003‘s impressive low noise level. Inside the unit, an R-core transformer hides under a shielding plate and supplies an equalizer circuit built with single transistors employing ample filtering. On the back of the unit, a toggle switch can switch the cutoff frequency of a high-pass filter between 30 and 50 Hertz. Likewise, there are two pairs of output jacks, one of which

The transformer is a low stray field and good-natured R-core type

The DS 003 is currently the second biggest model in the DS Audio hierarchy



The equalizer circuit is constructed fully discretely

provides an additional subsonic-filtered signal. DS Audio cartridges should never be operated unfiltered in the bass because, due to the transducer principle, they can reproduce frequencies down to DC, which speakers don‘t like. In conjunction with the 30 Hz filter, the subsonic output proved to be the preferred means for me.

I run the DS 003 with the tonearm aligned precisely horizontally. It reacts noticeably to VTA changes. If you set the arm too high, it loses in the high range. The adjustment downwards proves to be less critical.

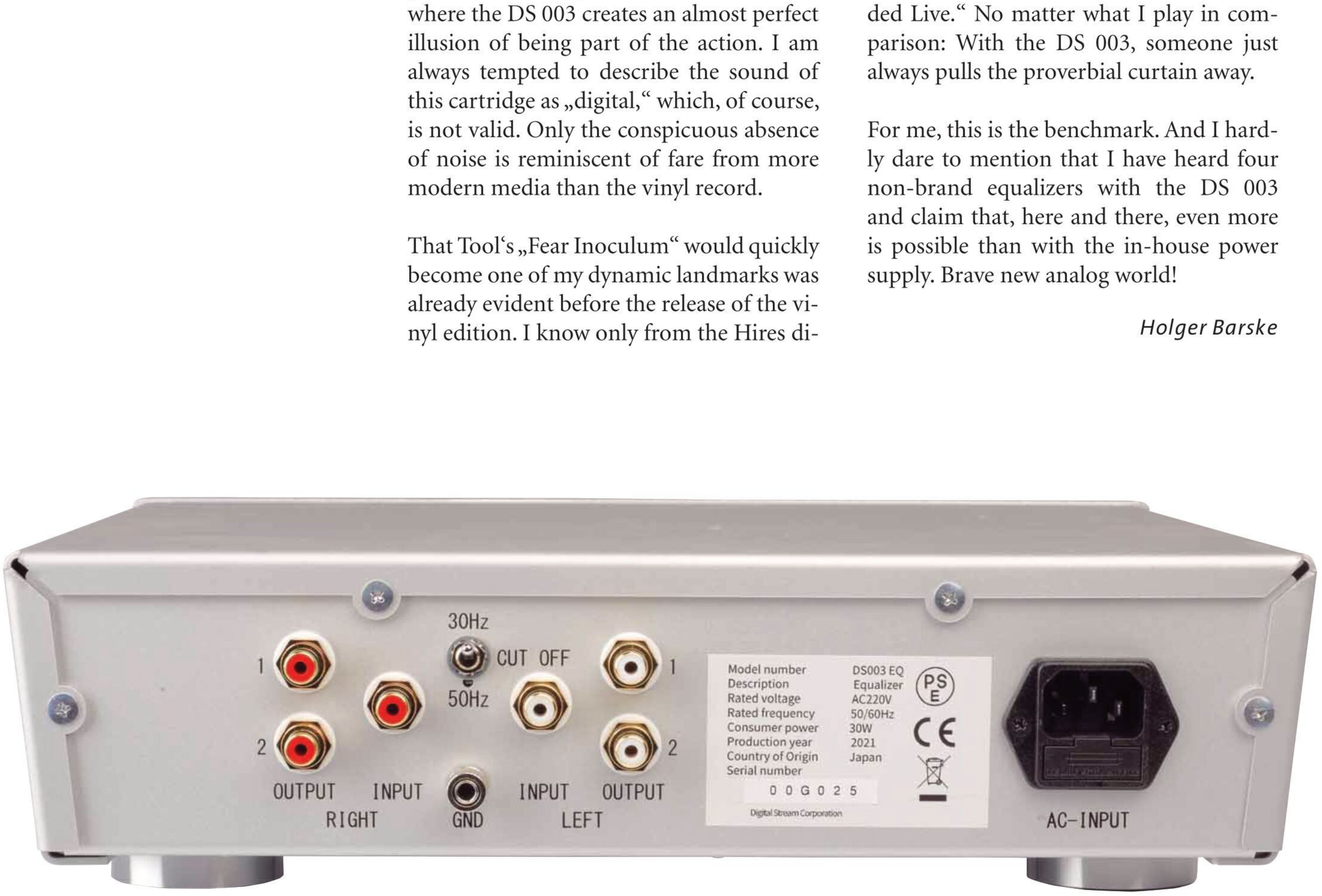
The power transformer is located under the cover plate; the material input is considerable

There are things on a record that I claim cannot be reproduced with any other cartridge than a DS Audio of this caliber. On the one hand, this has to do with the fact that it creates an eerily quiet atmosphere that I have never experienced in analog reproduction. Indeed, the DS 003 doesn‘t get rid of groove noise either, but no cartridge has ever come this close to digital silence. Combined with its massive attack, it makes it possible to bring to light things whose existence on a record was simply not perceptible before. John Coltrane‘s masterpiece „A Love Supreme“ is one such case where the DS 003 creates an almost perfect illusion of being part of the action. I am always tempted to describe the sound of this cartridge as „digital,“ which, of course, is not valid. Only the conspicuous absence of noise is reminiscent of fare from more modern media than the vinyl record.

That Tool‘s „Fear Inoculum“ would quickly become one of my dynamic landmarks was already evident before the release of the vinyl edition. I know only from the Hires digital version of the title what the four gentlemen unleash on „Invincible“ for highly precisely timed attacks on the stomach and eardrums. With other means, these dynamics are not reproducible in such a way. If any proof were needed that low moving mass is essential in cartridges, it‘s the DS 003‘s insane acceleration and deceleration capabilities. I don‘t know of any other cartridge (except maybe the Grand Master) that can make a sound halt as abruptly as this one. It grants startling transparency and presence to live recordings, such as Ten Years After‘s excellent 1973 album „Recorded Live.“ No matter what I play in comparison: With the DS 003, someone just always pulls the proverbial curtain away.

For me, this is the benchmark. And I hardly dare to mention that I have heard four non-brand equalizers with the DS 003 and claim that, here and there, even more is possible than with the in-house power supply. Brave new analog world!

Holger Barske



The back of the equalizer. One output runs through a subsonic filter; one doesn‘t

DS Audio DS 003

· Price: ca. 5500 Euro
· Distributor: High Fidelity Studio, Augsburg
· Weight: ca. 7,7 g / 5 kg
· Phone: +49 821 37250
· Internet: high-fidelity-studio.de
· Warranty: 2 Jahre
· Dimensions Equalizer: 330 x 92 x 295 mm (BxHxT)

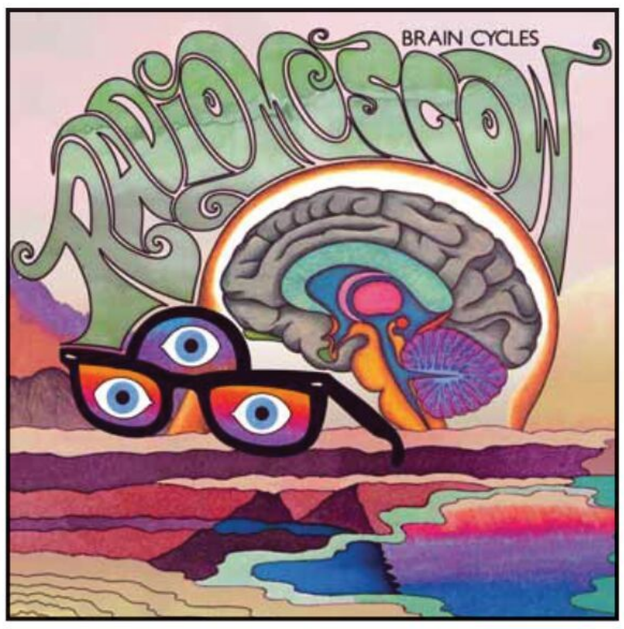
DS Audio
DS 003

International 2/22

» The least noisy, most dynamic, and most transparent way to play back records is to use a DS 003. It's that simple.

The More-Than-Appearance Floor-Stander

This is my first encounter with Fishhead Audio speakers. I probably should have listened to my colleagues and gotten involved with them a few years earlier ...



Radio Moscow – Brain Cycles

What we played

Radio Moscow
Brain Cycles

Dominique Fils Aimé
Stay Tuned!

Tindersticks
Distractions

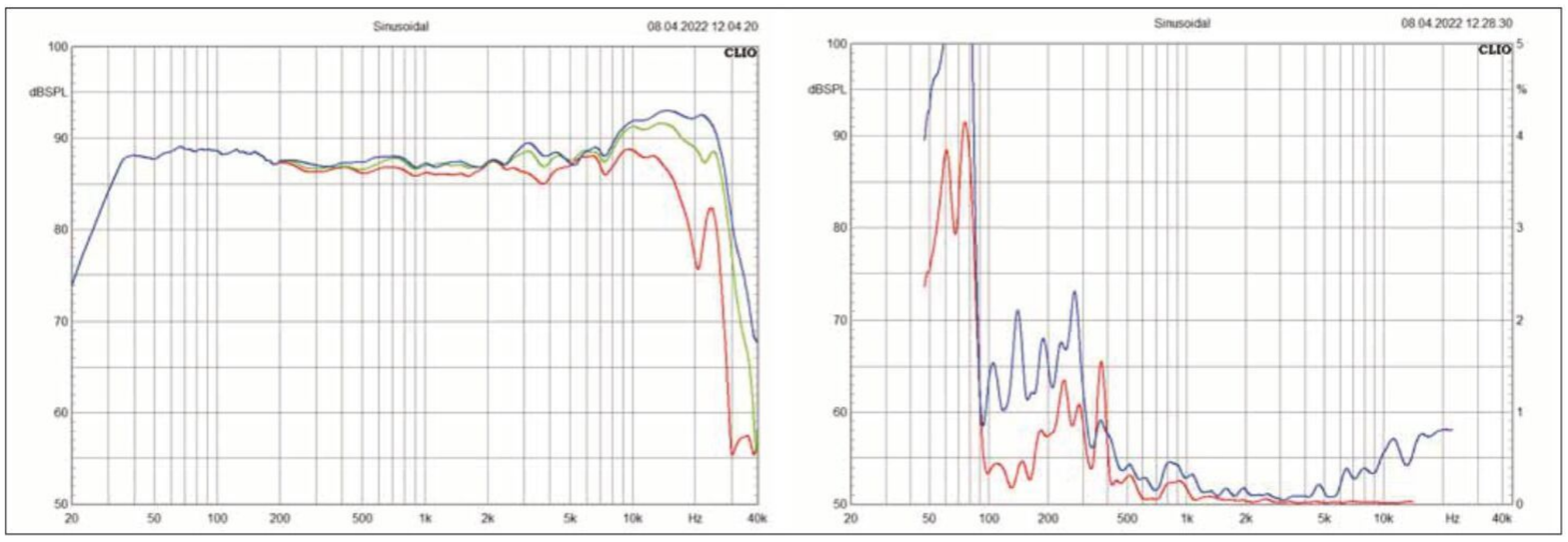
Tsuyoshi Yamamoto Trio
Autumn In Seattle

In terms of design, the Fishhead speaker is unpretentious but well thought out

As a regular reader, you are better versed in the subject than I am. You have already read two reviews of Fishhead loudspeakers in this magazine, while I have always ceded the job to my colleagues. For which apologies must be made. When I unpacked the speaker with the somewhat awkward model designation StrEight 1.8 FS, set it up in the photo studio, and then measured it, I did not yet know the price of the units. In front of the microphone, the Berlin-based StrEight behaved flawlessly; in terms of build quality, it is without fault, and in terms of design, someone has undoubtedly put some thought into it. When I read about 1500 EUR per pair before the first sound-wise review, I could hardly believe it - I had expected three to four times that amount. When I loaded them into the listening room and heard the first sounds from the two-way system of the thoughtful kind, I knew: This is something special.

A generously dimensioned AMT with rear cooling is used for the high range

For those who don‘t know: Fishhead Audio is the venture of a man named Christoph Winklmeier, a native of the coast, which explains the unusual company name. Since the mid-nineties, he has resided in Berlin, where he was employed for many years by a large loudspeaker direct marketing company. In 2016, the „Fischkopp“ founded his company, where he does what he does best: develop and market loudspeakers. Parallels to the approach of his former employer can be seen, which is not surprising: Winklmeier uses the knowledge he acquired there, of course. So, you can‘t listen to Fishhead speakers at the dealer around



Measurements

Lab commentary

The Fishhead speaker also cuts an outstanding figure in front of the microphone. The frequency response only drops noticeably below 40 hertz, and it continues to be linear above that. The tweeter gets a bit loud on-axis from around seven kilohertz, but this quickly disappears off-axis. The omnidirectional sound distribution is very even. The efficiency is a decent 87 decibels. The impedance rating reports uncritical four-ohm behavior, and stable amplifiers are nevertheless no disadvantage. The distortion behavior – the measurement record shows a rather loud 95 decibels of sound pressure – reveals exemplary low distortion values.

The woofer is a solid construction with a 38-millimeter voice coil and double magnet system

the corner. You buy them directly from the manufacturer and get them sent to your home. If it doesn't fit, there's the possibility of returning them – which should rarely happen in the case of the StrEight 1.8 FS, I dare say.

Our test subject is currently the only member of the StrEight series, which the manufacturer quite deliberately distinguishes from the two models of the Resolution series. The floor-standing and compact speakers there are intentionally tuned „rich in detail and precise" to the developer and thus correspond to a modern, audiophile-oriented listening taste. In the StrEight chapter, the journey goes in the direction of „direct and dynamic," so precisely where I feel most comfortable when it comes to sound.

In the StrEight 1.8 FS, one eight-inch woofer is responsible for the low frequencies of the spectrum, hence the „1.8" in the type designation. The „FS" stands for „floor stander," which decodes the nomenclature.

The aforementioned eight-inch speaker takes its toll in the form of a relatively wide baffle, which seems a bit unusual in a time when speakers have to be integrated inconspicuously in the living room. From a sound-wise point of view, it makes sense, as the sound thanks you for the „backup." Both drivers sit in an attached baffle that is slightly tilted backward. In this way, the designer steers the radiating lobes to where he wants them and also ensures that both motors are in a roughly vertical plane, which is beneficial for the timing. Driver number two, by the way, is a rather large-area air motion transformer. You're probably familiar with this tweeter design: a foil that is folded like a concertina is responsible for the sound radiation. It sets significantly more air in motion than, for example, the time-honored tweeter dome, which grants this type of tweeter a particularly powerful sound with lots of detail. Like its woofer colleague, the driver does not come from the shelves of known suppliers but is custom-made for this project. This is where Christoph's old-time connections pay off: He knows where in the Middle Kingdom to ask to get such extraordinary developments realized at affordable conditions. The woofer uses an embossed and coated paper cone, while the inverse dust cap in the center is made of scooped paper.

The baffle of the speaker is slightly tilted backward, which improves the vertical radiation pattern

Teammates

Turntables:
- TechDAS Air Force III / Reed 3p / Reed 1x / Infinity Black Widow.

Cartridge:
- Mustang MM
- DS Audio DS003

Phono preamps:
- MalValve preamp three phono
- DIY with tubes

Preamplifier:
- NEM PRA-5
- Canor Hyperion P1

Power amplifier:
- Silvercore Collector's Edition
- Canor Virtus M1

Competitors

Loudspeakers:
- DIY Focal / JBL
- Klang + Ton Cheap Trick 230

The crossover is a very straightforward affair with good components

The motor is a voice coil with a diameter of one and a half inches, which is the standard for cones of this size. Two powerful ferrite magnets provide the necessary magnetic force, and the whole thing is held together by a streamlined cast basket. This is all sorts of things, but not a cheap driver. The same goes for the AMT, to which the designer assigns responsibility for the acoustic events already from 1300 Hertz. Thus, it ensures a lovely radiation pattern because the large bass diaphragm does not have to work in frequency ranges where significant bundling effects occur. What do they get out of it? The speaker does not change its sound character significantly when you stand up. However, the AMT now has to work harder, which it does sovereignly, as our distortion measurements show. Winklmeier is, this fits his other remarks about the speaker‘s construction, a fan of the flattest possible filters in his crossovers. With this one, he managed twelve decibels per octave for the high and low pass, and he didn‘t need any correction elements - that gives us hope.

The speaker‘s appearance, which is available exclusively in white-sanded lacquer with a black front panel, is impeccable. Two solid steel rails with screwed-in spikes provide stability. If you want, you can adjust the speaker‘s tilt a bit via the four spikes. If it is lower at the front and higher at the rear, the sound image changes somewhat: The high range comes a little to the fore, the midrange is a bit more restrained, and overall the sound seems a bit more refined and ethereal.

The woofer works on a vented box; the associated tube exits at the bottom of the base. Here the feet provide the necessary distance. The connection terminal features two neat binding posts, nothing else. Winklmeier does without the obligatory bi-wiring terminal, which I find laudable.

Two solid binding posts are used to connect the speaker cable

Yes, I know. It‘s probably not practical to connect a 40000 EUR amplifier combination to a pair of 1500 EUR speakers. But I didn‘t want to miss out on the fun - and besides, I wanted to know how much is possible with the StrEight 1.8 FS when you put your mind to it. If we take the US band Radio Moscow and their 2009 album „Brain Cycles“ as a decision-making guide, the matter is simple: A lot. It should sound exactly like that and as little different as possible. An electric guitar can only sound really dirty and evil if sufficient cone area radiates the message. That is the case here. And if from behind 185 feedback-free triode watts push, the hut burns ablaze. I advise setting up the speakers almost parallel to establish a certain angle between the tweeter and the ear. Aiming the AMT much more directly at the ear does a bit too much at the upper end of the spectrum for me, but that is, as always, a matter of taste. But that doesn‘t matter anymore

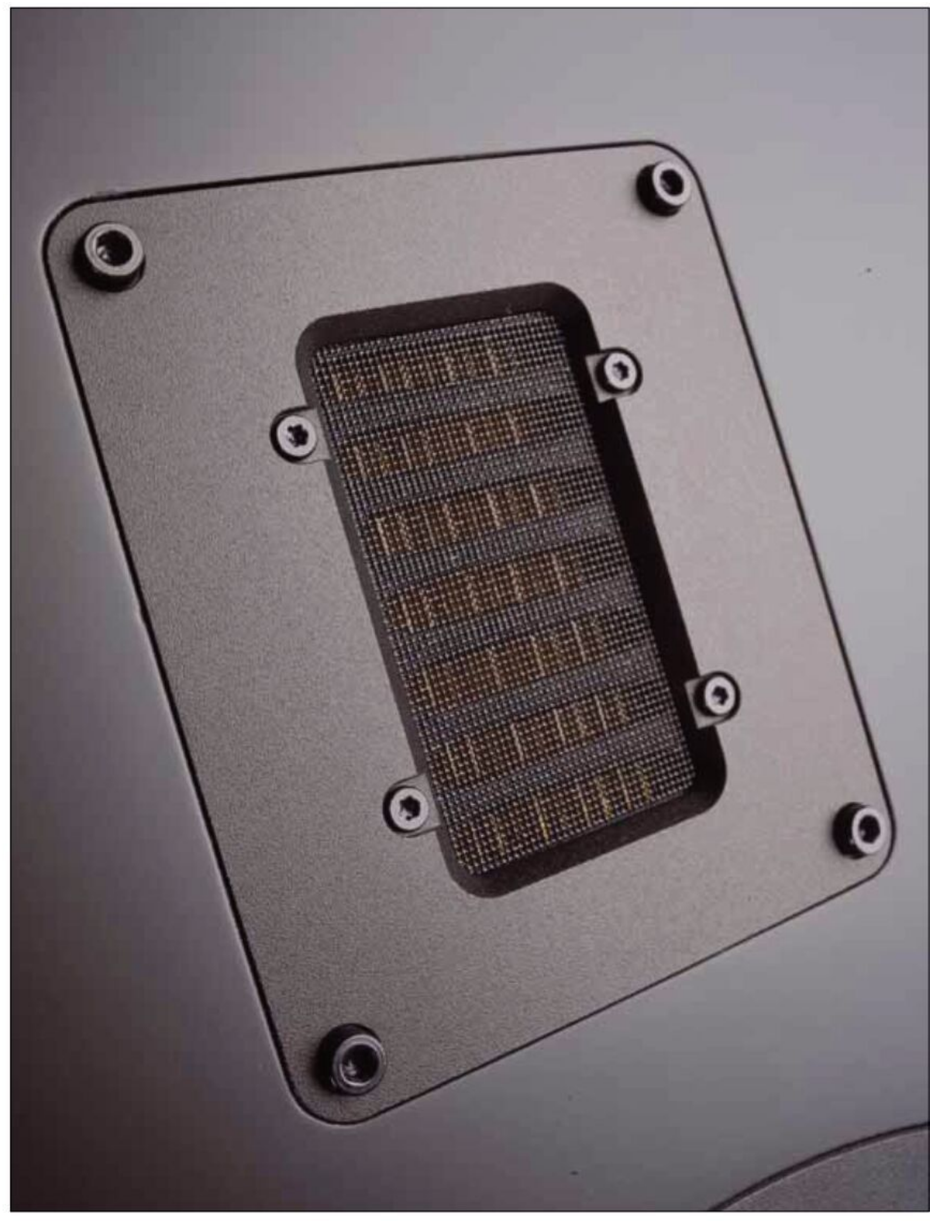
The bass cone is made of embossed paper, the dust cap of scooped paper.

The baffle is only available in black, and the cabinet only in white

A baffle cover is, of course, included in the delivery. It can be hidden behind the box

when Parker Griggs pushes „Broke Down“ into the living room. Winklmeier‘s intention with this loudspeaker is working out perfectly and pushes the right buttons for me: The speaker delivers a solid foundation, can be pretty loud, and lives from an extraordinarily expressive and powerful midrange that grants voices the necessary assertiveness - just listen to the wonderful Dominique Fils-Aimé through these speakers: Fervor, power and a neat separation from the rest of the ensemble, plus a great low end - that‘s how it should be. Voluminous and sufficiently tight in the bass, this is one of the better reflex tunings. Even with the synthetic low-frequency attacks on „Stay Tuned!“ the speaker has no problems. Does this work with „normal“ amplifiers? Surely so. A solid 50 watts is no mistake; the speaker thanks you with contour and astonishing dynamics. Compliments to Berlin!

Holger Barske



The large dispersion area allows to use the AMT down to 1300 Hertz

The vent exits at the bottom of the cabinet

Fishhead Audio StrEight 1.8 FS

- **Price per pair:** ca. 1,500 EUR
- **Distribution:** Fishhead Audio, Berlin
- **Phone:** +49 176 30126272
- **Internet:** fishhead-audio.de
- **Warranty:** 2 years
- **Dimensions:** 310 x 1010 x 355 mm (WxHxD over all)
- **Weight:** approx. 21 kg

lp

Fishhead Audio StrEight 1.8 FS

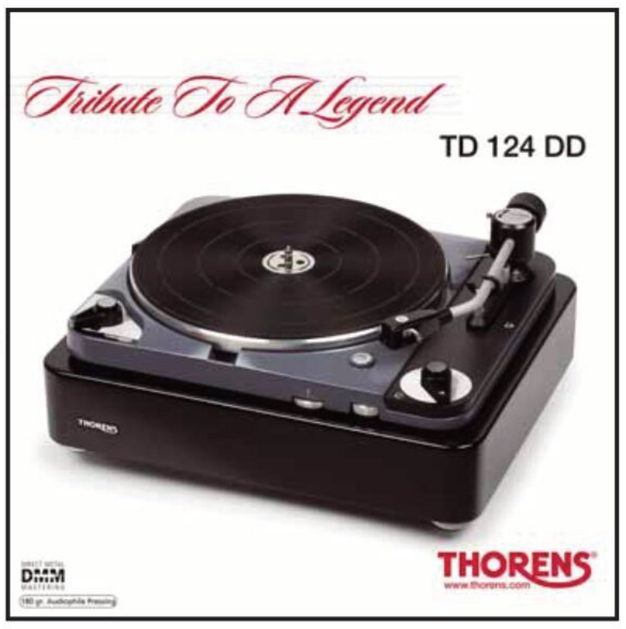
International 2/22

» Looks unspectacular but sounds excellent – especially at this price. The StrEight 1.8 FS lives from its open and powerful midrange and is a solid recommendation, especially for friends of a somewhat more robust gait.

THE WHITE GODS
THORENS

Sub-chassis? Yes, Please!

One of the things that Thorens owner Gunter Kürten can by no means be accused of is idleness. So, he has recently added another ambitious model to his turntable range.



VA – Tribute To A Legend

What we played

VA
Tribute To A Legend

Ryan Adams
Live At Carnegie Hall

Billy Talent
Crisis Of Faith

Rickie Lee Jones
Pirates

Eldovar
A Story Of Darkness & Light

Yes, that price range was still missing: 2000 EUR for everything. With tonearm and cartridge. Slightly less than the resurrected TD 160 TD 1600 / TD 1601. But the new turntable is by no means a stopgap; too much deliberation, work, and attention to detail have gone into it. It is by no means the case that Kürten simply ticks the boxes for the basic model and additional features on the order list at their supplier in the far east. Behind every new Thorens lies a lot of thought, and the boss feels so committed to the traditional brand that he would never offer anything trivial under this label. And so, the TD 1500 is light years away from being just another turntable. Undoubtedly, it is an integral part of the effort to develop the Thorens brand while preserving its long-standing tradition, and so there is a classic role model for the TD 1500 as well. You guessed it - it's the TD 150, that rather unassuming belt-drive unit that saw the light of day in 1965 and was to become the archetype for so many famous turntables - not least the Linn LP 12.

The TP 150 has an ingenious and largely invisible anti-skating mechanism

The TD 150 was the first model with a separate sub-chassis suspended from the turntable frame by spring suspension. This resulted in significantly improved decoupling of impact sound influences and motor vibrations. The sub-platter, driven by a flat belt, was also an innovation. These central design elements are also found in the TD 1500 - and much more, as we shall see. What has to be peeled out of the box has a pleasingly good feel: a delicate, high-gloss all-round frame, the base plate made of natural-colored anodized aluminum. A solid, straight surface is needed to set up the device, as the TD 1500 does not have a leveling option. In other words, the four dampening feet are not adjustable in

The arm is adjustable in height at the base

The toggle switch for speed selection is a must for „true“ Thorens turntables

height. Next step: Remove the two locking screws that hold the sub-chassis in place during transport. The TD 1500 is a „true“ sub-chassis turntable, with the crucial components on a separate metal plate, i.e., platter bearing and tonearm. One of the differences to the original model is that the position of the sub-chassis can now be adjusted from above without much effort, which was quite tricky with the TD 150 at the time. However, such hustle and bustle is not necessary: The unit is precisely pre-adjusted in this respect at the factory. The tonearm, located far to the right at the rear, disturbs the sub-chassis balance. A weight under the sub-chassis at the front

Teammates

Phono preamp:
· MalValve preamp three phono

Preamplifiers:
· Linnenberg Georg Philipp Telemann – NEM PRA-5

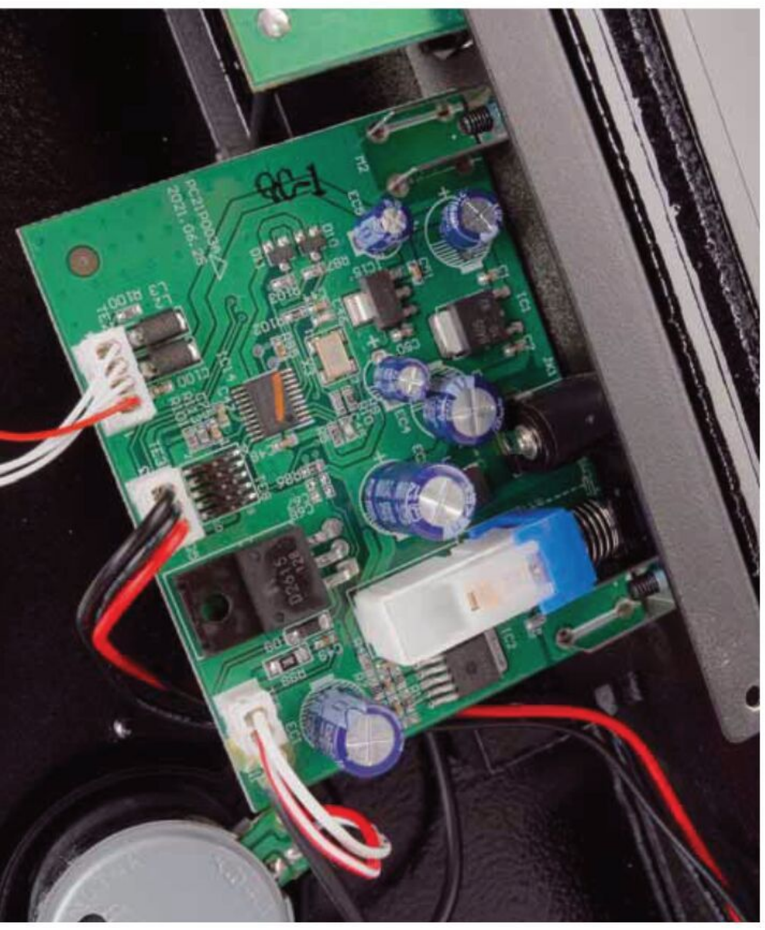
Power amplifiers:
· Linnenberg Georg Friedrich Händel
· Silvercore Collector‘s Edition

Loudspeakers:
· DIY Focal / JBL

Competitors

Turntables:
· TechDAS Air Force III / Reed 3p
· Clearaudio Reference Jubilee

Here, you can see that the motor is mounted on the driver, but the platter bearing is mounted on the sub-chassis



This is the motor controller board. It always ensures the correct speed with the help of the pulses from the speed sensor

right compensates the tonearm's mass-result: piston-shaped oscillation, as can be easily determined by tapping.

One of the biggest surprises, at least for me, is also partly mounted on the sub-chassis: the controlled motor of the unit. In other words, a pulse generator disk is attached to the platter axle, whose signals are passed on to the motor controller by a corresponding sensor. This controls the DC motor so that the rated speed is maintained. Of course, this is also possible with other turntables, but they usually play in completely different price ranges than the new Thorens. Very commendable, the user no longer has to deal with speed deviations or even fluctuations. The system even compensates for belt wear to a certain degree.

The platter of the TD 1500 is a one-piece light metal casting with a bar on the underside on which the drive belt runs. A separate sub-platter as on the ancestor is no longer necessary here. The heavy rubber mat that immobilizes the platter is reminiscent of the good old days, as is the classic toggle switch for speed selection. The transfer of the old-established technology into the modern era seems to have been successful.

This also applies to the new TP 150 tonearm. The J-shaped arm is undoubtedly similar to the TP 124 installed on the TD 124 DD, and the ideas behind both are very similar. Again, designer Helmut Thiele has pulled a few exciting ideas out of his hat that make the arm something special. The TP 150, typically medium weight at 14 grams, carries an SME-compatible headshell at the front end, opening the door to cartridges experimentation. The „standard equipment" of the TD 1500 includes a pre-adjusted MM cartridge Ortofon 2M Bronze, which individually costs about EUR 350 and is positioned relatively high in the Danish manufacturer's MM hierarchy. But wait: There was something about the TA 1500 from the last issue, which Thorens is rumored to have developed, especially for the TD 1500? Of course, we also tried that EUR 800 gem.

The TA 150, which is finely adjustable in height and can even be corrected for azimuth, has a feature that I particularly like because it is implemented in a refined and unusual way: anti-skating. Helmut Thiele didn't want any cantilevers or strings on

Thanks to the rotatable scale, the tracking force can be adjusted quite precisely even without a tonearm scale

The high-quality dust cover is, of course, included in the scope of delivery

the outside of the tonearm, which would compromise the beautifully clear line of the arm. So, without further ado, he moved the technology inside, or more precisely: into the lift arm. To this end, an inconspicuous thread emerges from the bottom of the arm tube and passes through a rigid ruby ring into the interior of the boom. It engages a horizontal cantilever, which loads the thread via a movable weight and thus pulls on the tonearm as desired. The weight adjustment is made with an included pin. Otherwise, it would be difficult to get at it.

The TD 1500‘s setup and connection prove to be completely hassle-free. The latter is also because the device has a connection panel with both RCA and XLR jacks, and you can wire in the way that best suits your chain.

The cartridge, which is pre-adjusted in the headshell, can be installed in two easy steps, and adjusting the tracking force and anti-skating is also no problem. The first notes are delivered by our TD 1500 with the Ortofon MM, and damn – why do I usually listen to turntables for five-digit amounts? This one offers a finely chiseled, precise, and well-structured sound that leaves nothing to be desired.

A lot of evidence for this is provided by the splendid sampler „Tribute To A Legend,“ which Gunter Kürten compiled himself and which we already presented in the last issue. The TD 1500 plays crisp and expressive. The opening „Jazzrausch“ is not only voluminous and deep; the snare and toms also have real „Knack,“ the horns have charm and zeal, and the voice has grip and authority. It reminds me of the Clearaudio Reference Jubilee, which is more than ten times as expensive. The Thorens plows through Fela Kuti‘s soulful „Let‘s Start“ with casual skill and structures the proceedings in exemplary fashion. I like its powerful tone, combined with good drive. The unit also shows verve and zest in Ryan

At the bottom left, the counterweight is mounted on the sub-chassis to compensate for the influence of the tonearm

Adams‘ great Carnegie Hall concert, which has nothing to do with the slightly rounded normality that I associate with the TD 150 from back then. However, especially with Ryan Adams, things are still changing after the change to the great TAS 1500 pickup system. The stage opens up once again, and we are even closer to the action, yet the team convincingly conveys the amazingly intimate atmosphere of the two concerts. Billy Talent‘s new full-throttle anthem, „Reckless Paradise,“ on the other hand, almost pleases me a bit better with the more down-to-earth MM; the inimitable early Rickie Lee Jones, on the other hand, undoubtedly suits the MC‘s smoothness better. Either way – this is an excellent turntable for all walks of life!

Holger Barske

The beautifully simple TP 150 guides the cartridge on a J-shaped aluminum tube

Thorens TD 1500

· Price: approx. 2000 EUR with Ortofon 2M Bronze
· Distribution: Thorens, Bergisch-Gladbach
· phone: +49 2204 8677720
· Internet: thorens.com
· Warranty: 2 years
· Dimensions: 420 x 141 x 360mm (B x H x T)
· Weight: ca. 7.9kg

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